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United States
Department of
Agriculture

Soil
Conservation
Service

Spokane,
Washington



Water Supply Outlook for Washington

as of JUNE 1, 1984



TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

COVER PHOTO: "Spring is on its way"

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, West Technical Service Center, Room 510, 511 N.W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	Room 129, 2221 East Northern Lights Blvd., Anchorage, Alaska 99504
Arizona	Room 3008, Federal Building 230 N. First Ave., Phoenix, Arizona 85025
Colorado (N. Mex.)	P.O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th St., Boise, Idaho 83702
Montana	P.O. Box 98, Bozeman, Montana 59715
Nevada	P.O. Box 4850, Reno, Nevada 89505
Oregon	1220 S. W. Third Ave., Portland, Oregon 97204
Utah	4402 Federal Bldg., 125 South State St., Salt Lake City, Utah 84147
Washington	360 U.S. Court House, Spokane, Washington 99201
Wyoming	P.O. Box 2440, Casper, Wyoming 82601

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Snow Surveys Branch, California Department of Water Resources, P.O. Box 388, Sacramento, California 95802 — for British Columbia by the Ministry of the Environment, Water Investigations Branch, Parliament Buildings, Victoria, British Columbia V8V 1X5 — for Yukon Territory by the Department of Indian and Northern Affairs, Northern Operations Branch, 200 Range Road, Whitehorse, Yukon Territory Y1A 3V1 — and for Alberta, Saskatchewan, and N.W.T. by the Water Survey of Canada, Inland Waters Branch, 110-12 Avenue S.W., Calgary, Alberta T3C 1A6.



WATER SUPPLY OUTLOOK FOR WASHINGTON

and

FEDERAL-STATE-PRIVATE COOPERATIVE SNOW SURVEYS

ISSUED BY

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Chief

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FORECASTS BY

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**SOIL CONSERVATION SERVICE
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WATER SUPPLY OUTLOOK

State of Washington

JUNE 1, 1984

Water supply forecasts for most of Washington continued much the same as last month. Water users in the Olympic's and the Puget Sound areas can still expect below normal runoff this spring and summer; however, cool May weather and precipitation averaging 250% of normal have improved the outlook. The mountain snowpack was generally below average most of the winter. Precipitation was above average over the state during May, with the Yakima region having above 300% of normal at the reservoir sites for the month. There continued to be some improvement in the snow cover over the Cascade Mountain range. Snow cover is below average in the Spokane, Pend Oreille, Wenatchee, Entiat and Methow Rivers. The Northwest Cascade slopes show well below average snowpack. Fall and winter precipitation was above normal in all sections of the state. Reservoir storage continues very good for June 1. Streamflow for May was below average due to the below normal temperatures.

THIS IS THE LAST WATER SUPPLY REPORT FOR 1984. IF YOU WISH TO RECEIVE THESE
REPORTS NEXT YEAR, PLEASE RETURN THE BACK COVER OF THE MAY 1 REPORT IF YOU
HAVE NOT ALREADY DONE SO.

SNOW COVER

Only a few snow courses are measured during the June 1st period. Snow is gone from the low elevation, remaining at only those areas above 4300 feet and the north facing slopes. Twenty-five of the 28 reporting SNOTEL sites are still reporting snow water. The below average temperatures for May retarded the snowmelt improving the upper elevation snowpack.

PRECIPITATION

May precipitation was above average over the state, with Northeastern Washington at 141%, Southeastern Washington at 130%, the Southwest Cascade at 224%, and the Okanogan area at 146%.

Precipitation during the November-March winter period has been above average over the entire state except the Southwest Cascade area. During this period the Puget Sound area received 63.54 inches, 102% of normal. The Yakima area received 30.02 inches, 101% of normal. Precipitation in the northeastern area was 139% of normal.

RESERVOIR STORAGE

June 1 stored water supplies continue very good within the irrigated sections of the state. The Yakima irrigation reservoirs are storing 1,050,000 acre feet of water compared to the June 1 average of 922,100, or 116% of normal. The reservoirs in the Okanogan Irrigation District are at capacity. Lake Chelan at 341,800 acre-feet, is 76% of normal being held down by a late snowmelt.

STREAMFLOW

Below normal May temperatures have retarded the snowmelt keeping stream flows low during May over most of the state. Streams in the state having below average flows were the Pend Oreille River at 68%, Spokane River at 83%, Yakima River at 67% and the Wenatchee River at 60%. Above average runoff for May included the Grande Ronde at 190%, the Cowlitz River at 126%, and the Walla Walla River at 128%.

There are no further forecasts being made for Washington for the June report. The May reports for the Puget Sound Rivers are still forecast below average. Forecasts for spring and summer streamflow will be within 20% of average over most of the state. The forecasts for the streams in the Yakima Basin remain nearly constant with 80% at Parker and Cle Elum. Late snow reports on the Green River for May show an increase in the snowpack and a revised forecast of near normal runoff.

RESERVOIR STORAGE - 1000 Acre Feet

BASIN OR STREAM	RESERVOIR	USABLE ^{1/} CAPACITY	1984	Measured (April)		
				1983	1982	Normal*
<u>COLUMBIA</u>						
Spokane	Coeur d'Alene Lake	225.1	289.5	235.2	238.0	225.0
Columbia	Franklin D. Roosevelt Lake	5232.0	2389.3	2350.1	2340.5	2565.6
Columbia	Banks Lake	714.9	674.8	648.0	632.0	406.2
Okanogan	Conconully Reservoir	13.0	13.3	13.5	13.1	9.1
Okanogan	Conconully Lake	10.5	10.4	10.4	10.4	9.4
Chelan	Lake Chelan	676.1	341.8	566.0	391.7	450.6
<u>YAKIMA</u>						
Yakima	Keechelus Lake	157.8	157.2	156.8	149.2	139.6
Kachess	Kachess Lake	239.0	238.2	238.6	229.6	217.1
Cle Elum	Lake Cle Elum	436.9	421.8	435.8	326.5	367.9
Bumping	Bumping Lake	33.7	33.6	33.6	29.8	25.4
Tieton	Rimrock Lake	198.0	195.0	195.0	189.8	160.2
<u>PUGET SOUND</u>						
Skagit	Ross Reservoir	1404.1	921.5	1001.7	855.6	1033.9
Skagit	Diablo Reservoir	90.6	82.9	85.9	87.4	86.1
Skagit	Gorge Reservoir	9.8	7.4	7.4	7.9	8.3

^{1/} Based on Active Storage

* 15-yr. Average 1963-1977

PRECIPITATION 1/

Division Average Observations and Departures

Drainage Divisions	Fall		Winter		Spring	
	Sept-Oct Observed	1983 <u>2/</u> Departure	Nov. 1983 - Mar. 1984 <u>2/</u> Observed	Departure	Apr-May 1984 Observed	Departure
Northeastern Wash	1.55	-1.55	11.78	+2.38	4.38	+0.05
Southeastern Wash	2.54	-0.06	12.22	+1.79	3.55	+0.62
East Slope Cascades	3.76	-0.99	28.14	+0.61	4.79	+1.48
North Central Wash	1.45	-0.14	7.42	+0.88	2.06	+0.29
Northwest Cascades	7.97	-5.24	57.50	+2.11	15.04	+4.64
Southwest Cascades	5.36	-3.32	40.99	-0.65	10.74	+3.44

Northeastern Washington	- Lower Spokane, Colville, Sandpoil, and Lower Kettle Drainages
Southeastern Washington	- Touchet, Tucannon, and Palouse Drainages
East Slope Cascades	- Yakima, Wenatchee, and Chelan Drainages
North Central Washington	- Methow and Okanogan Drainages
Northwest Slope Cascades	- Puget Sound Drainages
Southwest Slope Cascades	- Lower Columbia Drainages

1/ - Preliminary analysis by National Weather Service from data furnished by Meteorological Services of Canada and the National Weather Service.

2/ - Departure from 15-year (1958-1972) drainage division average.

SNOW DATA TO JUNE 1, 1984 - APPENDIX 1

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
NAME	Number	Elevation				Last Year	Average

UPPER COLUMBIA DRAINAGEPEND OREILLE RIVER

Benton Meadow	16A02	2344	4/30	0	0.0	0.0	0.0
Benton Spring	16A03	4900	Not Measured				
Boyer Mtn	17A02	5250	"				
Bunchgrass Meadow	17A01	5000	6/01		20.3sp		
Chewelah	17A04	4925	Not Measured				
Heart Lake Trail	14C10	4800	"				
Hoodoo Basin	15C10	6000	6/01	71	35.8	29.9	36.3
Hoodoo Creek	15C01	5900	6/01	66	31.6	27.6	35.6
Lookout	15B02	5250	6/01	18	9.0	2.4	13.3
Nelson	2D04CA	3050	6/01	0	0.0	0.0	0.0
Schweitzer Bowl	16A06	4500	5/30	12	5.8	0.0	1.8
Schweitzer Ridge	16A05	6100	5/30	81	40.6	30.6	29.9

KETTLE RIVER

Barnes Creek	2B06CA	5300	Not Measured				
Big White Mtn.	2E03CA	5500	"				
Butte Creek	18A03	4070	"				
Carmi	2E02CA	4100	"				
Farron #1	2B02CA	4000	"				
Farron #2	2B02ACA	4000	"				
Goat Creek	18A04	3595	"				
Monashee Pass	2E01CA	4500	5/29	17	7.2	4.9	2.0
Summit G.S.	18A05	2150	Not Measured				5.8
Trapping Creek Lower	2E05CA	3050	"				
Trapping Creek Upper	2E04CA	4450	"				

COLVILLE RIVER

Baird	17A06	3215	Not Measured				
Chewelah	17A04	4925	"				
Togo	18A10	3370	"				

Average based on 1961-1980 averages
sp SNOTEL data

SNOW DATA TO JUNE 1, 1984 - APPENDIX 2

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
NAME	Number	Elevation				Last Year	Average *

SPOKANE RIVER

Above Burke	15B08	4100	Not Measured				
4th of July Summit	16B03	3100	6/01	0	0.0	0.0	0.0
Lookout	15B02	5250	6/01	18	9.0	2.4	13.3
Mosquito Ridge	16A04	5110	Not Measured				
Sherwin	16C01	3200	" "				
Sunset	15B09A	5600	" "				
Lost lake	15B14A	6000	5/30	96	42.1	36.0	43.4

NEWMAN LAKE

Ragged Ridge	17B02	3333	5/01	0	0.0	0.0	New
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OKANOGAN RIVER

Aberdeen Lake	1F01CA	4300	Not Measured				
Blackwall Peak	2G03CA	6250	5/31	63	27.2	31.9	34.8
Brenda Mine	2F18CA	4800	5/31	8	2.9	0.0	0.0
Brookmere	1C01CA	3200	Not Measured				
Enderby	1F04CA	6250	5/28	115	54.7	42.0	39.3
Esperon Creek Lower	2F15CA	4400	Not Measured				
Esperon Creek Middle	2F15CA	4700	" "				
Esperon Creek Upper	2F13CA	5400	" "				
Grayback Reservoir	2F08CA	5225	" "				
Hamilton Hill	2G06CA	4900	" "				
Harts Pass	20A05A	6500	5/31		41.5s	40.0	
Isintok Lake	2F11CA	6300	Not Measured				
Lost Horse Mountain	2G04CA	7000	" "				
McCulloch	2F03CA	4200	" "				
Missezula Mtn.	2G05CA	5100	" "				
Mission Creek	2E05CA	6000	" "				
Monashee Pass	2E01CA	4500	5/29	17	7.2	0.0	2.0
Mount Kobau	2F12CA	5960	Not Measured				

Average based on 1961-1980 averages

s SNOTEL data

SNOW DATA TO JUNE 1, 1984 - APPENDIX 3

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
NAME	Number	Elevation				Last Year	Average *

OKANOGAN RIVER (CONT.)

Mutton Creek No. 1	19A01	5700	Not Measured				11.8
Mutton Creek No.2 SP	19A11	6000	" "				New
Nickel Plate	2G02CAN	6200	" "				
Oyama Lake	2F19CAN	4400	" "				
Postill Lake	2F07CAN	4500	" "				
Rusty Creek	19A03	4000	" "				
Salmon Meadows	19A02	4500	" "				5.0
Silver Star Mountain	2F10CAN	6050	5/27	79	34.4	34.6	25.7
Summerland Reservoir	2F02CAN	4200	Not Measured				
Sunday Summit	2G01CAN	4300	" "				
Trout Creek	2F01CAN	4700	" "				
Vaseux Creek	2F20CAN	4600	" "				
White Rocks Mountain	2F09CAN	6000	5/30	43	20.4	10.7	10.1

METHOW RIVER

Harts pass	20A05A	6500	5/31		41.5s	40.0	
Mutton Creek NO. 1	19A01	5700	Not Measured				
Mutton Creek No. 2 SP	19A11	6000	" "				New
Rusty Creek	19A03	4000	" "				
Salmon Meadows	19A02	4500	" "				

CHELAN LAKE BASIN

Cloudy Pass +	20A22	6500	Not Measured				35.2
Lyman Lake	20A23	5900	5/31		74.8sp	40.5	
Little Meadows +	20A24a	5275	Not Measured			37.6	37.6
Mirror Lake	30A39	5600	5/30		31.1sp		New
Park Creek Ridge	20A12	4600	5/31		24.4sp	0.0	
Rainy Pass	20A09	4780	5/31		29.4sp	19.4	

Average based on 1961-1980 averages

+ Aerial stadia observation

sp SNOTEL data

SNOW DATA TO JUNE 1, 1984 - APPENDIX 4

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average *

ENTIAT RIVER

Brief	20B19	1600	NOT Measured				
Entiat Meadows +	20A33	4540	" "				
Entiat River Trail +	20A34	3325	" "				
Fox Camp +	20A36	6510	" "				
Pope Ridge	20B20	3450	" "				
Pugh Ridge +	20A32	6725	" "				
Shady Pass	20A37	6200	5/29	48	21.6	8.8	17.1
Snow Brushy +	20A35	3910	Not Measured				
Tommy Creek +	20B21	4900	" "				

WENATCHEE RIVER

Berne Mill Creek	21B23	3170	Not Measured				
Berne Mill Creek SP	21B41	3240	" "				
Blewett Pass No. 2	20B02	4270	" "				
Chiwaukum G. S.	20B16	1810	" "				
Lake Wenatchee	20B05	1970	Watershed Logged	Discontinued			
Lyman Lake	20A23	5900	5/31	74.8sp	40.5		
Merritt	20B18	2140	Not Measured				
Stevens Pass	21B01	4070	5/30	74	37.3	11.4	35.8
Stevens Pass Sand Shed	21B45	3700	5/30	27	12.3	0.0	14.2

COLOCKUM CREEK

Trough #2(SP)	20B25	5310	5/25		0.0sp	0.0	
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+ Aerial stadia observation

Average based on 1961-1980 averages

sp SNOTEL data

SNOW DATA TO JUNE 1 , 1984 - APPENDIX 5

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average *

SQUILCHUCK CREEK

Beehive Springs	20B03	4400	Not Measured				
Scout-a-Vista	20B04	3400	" "				

STEMILT CREEK

Stimelt Slide	20B06	5000	Not Measured				
Upper Wheeler	20B07	4400	" "				

YAKIMA RIVER

Ahtanum R.S.	21C11	3100	Not Measured				
Big Boulder Creek	21B09	3200	" "				
Blewet Pass No. 2	20B02	4270	" "				
Bumping Lake Old	21C08	3450	" "				
Bumping Lake New	21C36	3400	" "				
Cayuse Pass	21C06	5300	" "				
Colockum Pass	20B09	5370	" "				
Corral Pass	21B13	6000	" "				
Fish Lake	21B04	3371	" "				
Green Lake	21C10	6000	" "				
Grouse Camp	20B11	5385	" "				
Lake Cle Elum	21B14	2200	"				
Morse Lake	21C17	5400	5/31		46.7sp		
Olallie Meadows	21B02	3625	5/31		45.2sp		
Stampede Pass	21B10	3860	5/31	68	37.3	0.0	26.9
Tunnel Avenue	21B08	2450	Not Measured				
White Pass E. Side	21C28	4500	" "				

Average based on 1961-1980 averages
 sp SNOTEL Reading

SNOW DATA TO JUNE 1, 1984 - APPENDIX 6

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
NAME	Number	Elevation				Last Year	Average *

AHTANUM CREEK

Ahtanum R. S.	21C11	3100	Not Measured				
Green Lake	21C10	6000	" "				

LOWER COLUMBIA DRAINAGEMILL CREEK

High Ridge SP	18D19	4890	5/31		0.0sp	0.0	
Touchet # 2 SP	17C55	5530	5/31		9.9sp	0.2	

COWLITZ RIVER

Cayuse Pass	21C06	5300	Not Measured				
White Pass E. Side	21C28	4500	" "				

PUGET SOUND DRAINAGEWHITE RIVER

Cayuse Pass	21C06	5300	Not Measured				
Corral Pass	21B13	6000	" "				
Morse Lake	21C17	5400	" "				

GREEN RIVER

Airstrip	21B24	1800	5/31	0	0.0		
Charley Creek	21B25	1200	5/31	0	0.0		
Cougar Mountain	21B42	3200	5/30		3.0sp	0.0	
Grass Mtn. No. 2	21B27	2900	5/31	0	0.0		
Grass Mtn. No. 3	21B28	2100	5/31	0	0.0		
Lester Creek	21B29	3100	5/31	2	1.6		
Lynn Lake	21B50	4000	5/31	8	3.5	0.0	3.2
Sawmill Ridge	21B31	4700	5/31	57	25.6		
Stampede Pass	21B10	3860	5/31	68	37.3	26.4	26.9
Twin Camp	21C30	4100	5/31	22	10.4		

Average based on 1961-1980 averages
sp SNOTEL Reading

SNOW DATA TO JUNE 1, 1984 - APPENDIX 7

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
NAME	Number	Elevation				Last Year	Average *

SNOQUALMIE RIVER

Olallie Meadows	21B02	3625	5/31		45.2sp		
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SKYKOMISH RIVER

Stevens Pass	21B01	4070	5/30	74	37.3	11.4	35.8
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Stevens Pass Sand Shed	21B45	3700	5/30	27	12.3	0.0	14.2
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SKAGIT RIVER

Beaver Creek Trail	21A04	2200	Not Measured				
Beaver Pass	21A01	3680	" "				
Brown Top Ridge	21A28	6000	" "				
Devils Park	20A04	5900	" "				
Freezeout Creek Trail	20A01	3500	" "				
Freezeout Meadows New	20A38	5000	" "				
Granite Creek	21A29	3500	" "				
Harts Pass	20A05A	6500	5/31		41.5sp	40.0	
Klesilkwa	3D03ACA	3700	Not Measured				
Lightning Lake	3D02CAN	4000	" "				
Lyman Lake	20A23	5900	5/31		74.8sp	40.5	
Meadow Cabins	20A08	1900	Not Measured				
New Hozomeen Lake	21A30	2800	" "				
Rainy Pass	20A09	4780	5/31		29.4sp	19.4	
Thunder Basin	20A07	4200	Not Measured				

Average based on 1961-1980 averages
sp SNOTEL data

SNOW DATA TO JUNE 1, 1984 - APPENDIX 8

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average *

BAKER RIVER

Dock Butte +	20A11A	3800	Not Measured
Easy Pass +	21A07A	5200	" "
Jasper Pass +	21A06A	5400	" "
Martin Lake	21A09A	3600	" "
Mt. Blum +	21A18A	5800	" "
Rocky Creek	21A12A	2100	" "
Schreibers Meadow	21A10A	3400	" "
S.F. Thunder Creek +	21A14A	2200	" "
Watson Lake	21A08A	4500	" "

OLYMPIC PENINSULA DRAINAGEDUNGENESS RIVER

Deer Park	23B04	5200	Not Measured
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MORSE CREEK

Cox Valley	23B14	4500	Not Measured
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ELWHA RIVER

Hurricane	23B03	4500	Not Measured
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WYNOOCHEE RIVER

Carrol Pass	23B15	50	23.9
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+ Aerial stadia observation

Average based on 1961-1980 average

SNOTEL READINGS, JUNE 1, 1984 - APPENDIX 1

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average ^{##}

PEND OREILLE RIVER

Bunchgrass Meadow	17A01	5000	5/15		27.5	36.3
			5/31		20.7	12.5

OKANOGAN & METHOW RIVERS

Harts Pass	20A05	6500	5/15		44.0	49.1
			5/31		41.5	31.4
Salmon Meadow	19A02	4500	5/15		5.9	4.0
			5/23		0.0	17.1

CHELAN LAKE BASIN

Lyman Lake	20A23	5900	5/15		72.6	59.1
			5/31		74.8	35.5
Mirror Lake	20A39	5600	5/14		32.8	
			5/30		31.1	
Park Creek Ridge	20A12	4600	5/15		32.8	
			5/31		24.4	
Rainy Pass	20A09	4780	5/15		34.0	35.6
			5/25		32.7	20.2

ENTIAT RIVER

Pope Ridge	20B20	3450	5/15		0.0	0.0
			5/25		0.0	0.0

WENATCHEE RIVER

Blewett Pass	20B02	4270	5/15		1.0	
			5/31		1.5	
Lyman Lake	20A23	5900	5/15		72.6	59.1
			5/31		74.8	35.5
Stevens Pass	21B01	4070	5/15		32.7	9.2
	GT		5/30		41.0	21.4
			5/31		22.7	0.0
Trough # 2	20B25	5300	5/15		0.0	11.0
			5/31		0.0	0.0

GT = Ground Truth measurement at SNOTEL site

SNOTEL READINGS, JUNE 1, 1984 - APPENDIX 2

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR		PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)
NAME	Number	Elevation				Last Year Average #

COLOCKUM CREEK

Trough # 2	20B25	5300	5/15		0.0	11.0
			5/30		0.0	0.0

STEMILT CREEK

Upper Wheeler	20B07	4400	5/15		2.4	5.8
			5/31		0.0	1.3

YAKIMA RIVER

Big Boulder Creek	21B09	3200	5/15		11.2	0.2
			5/31		10.6	0.0
Bumping Ridge	21C38	4600	5/15		28.2	
			5/30		22.4	
Corral Pass	21B13	6000	5/15		7.2	10.1
			5/30		2.7	0.3
Fish Lake	21B04	3371	5/15		32.2	
			5/31		16.7	
Green Lake	21C10	6000	5/15		20.3	32.2
			5/31		11.9	11.8
Grouse Camp	20B11	5385	5/14		11.1.	23.2
			5/30		0.0	
Morse Lake	21C17	5400	5/15		23.2	80.5
			5/31		46.7	14.9
White Pass E. Side	21C28	4500	5/15		23.1	16.6
			5/29		18.0	0.3

GT = Ground Truth measurement at SNOTEL site

SNOTEL READINGS, JUNE 1, 1984 - APPENDIX 3

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
NAME	Number	Elevation				Last Year	Average #

AHTANUM CREEK

Green Lake	21C10	6000	5/15		20.3	32.2
			5/31		11.9	11.8

TOUCHET RIVER

Touchet # 2	17C5	5530	5/16		26.4	28.8
			5/31		9.9	0.2

LEWIS RIVER

June Lake	22C09	3200	5/15			
			5/31			
Lone Pine Shelter	21C26	3800	5/15		39.2	39.6
			5/26		36.1	20.4
Plains of Abraham	22C01	4400	5/15		99.6	
			5/31		73.1	
Sheep Canyon	22C10	4050	5/15		44.7	
			5/29		36.9	
Spencer Meadow	21C20	3400	5/15			
			5/01			
Surprise Lake	21C13	4250	5/15		59.6	44.9
			5/31		47.7	16.7

COWLITZ RIVER

Pigtail Peak	21C33	5900	5/15		54.5	46.6
			5/31		51.3	26.3
Potato Hill	21C14	4500	5/15		16.4	
			5/31		4.8	
Sheep Canyon	22C10	4050	5/15		44.7	
			5/29		36.9	
Strawberry Landing	22C08	3280	5/15			36.3
			5/01			
Steppes PC	22C11		5/15			
			5/30			
Spirit PC	22C12		5/15			
			5/30			

GT = Ground Truth measurement at SNOTEL sites

SNOTEL READINGS, JUNE 1, 1984 - APPENDIX 4

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
NAME	Number	Elevation				Last Year	Average #

NISQUALLY RIVER

Paradise Park	21C35	5500	5/14		22.1		
			5/29		20.8		

WHITE RIVER

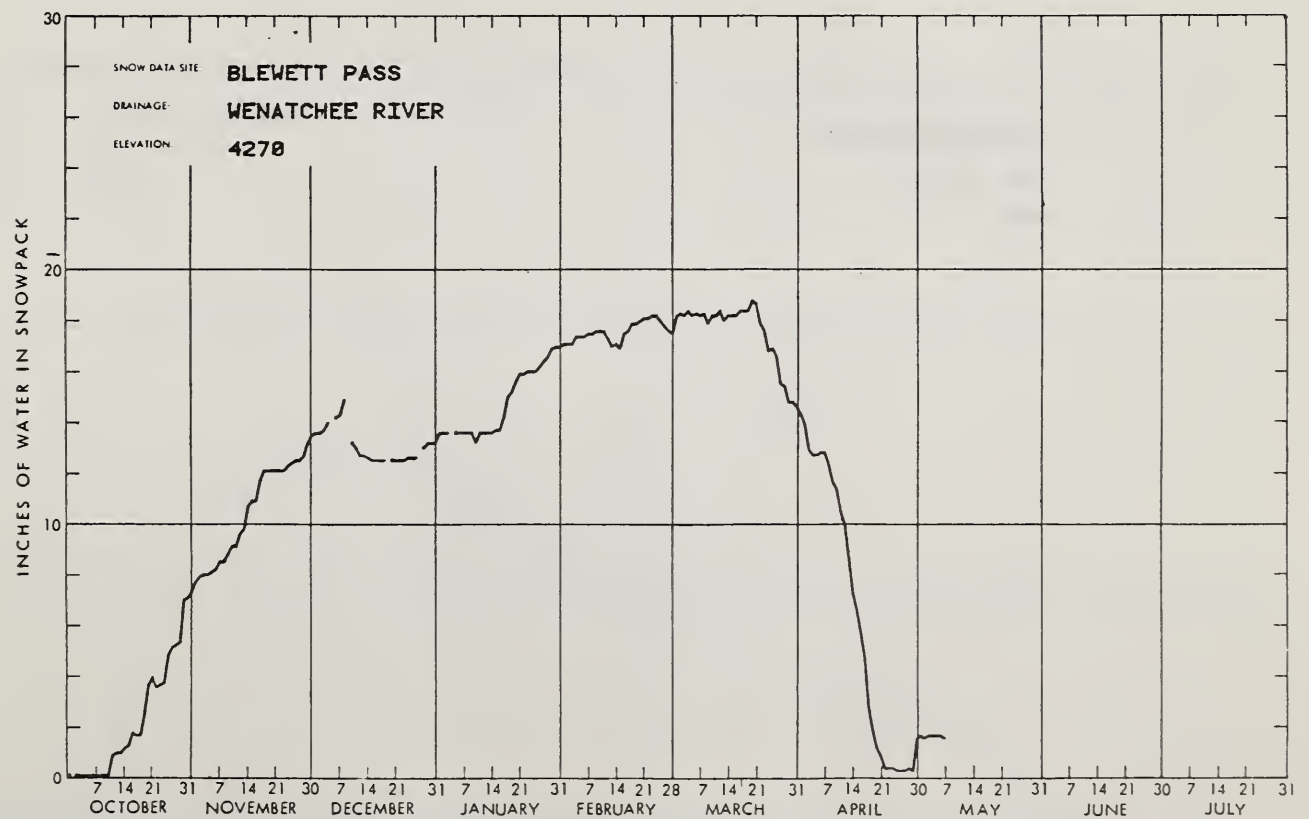
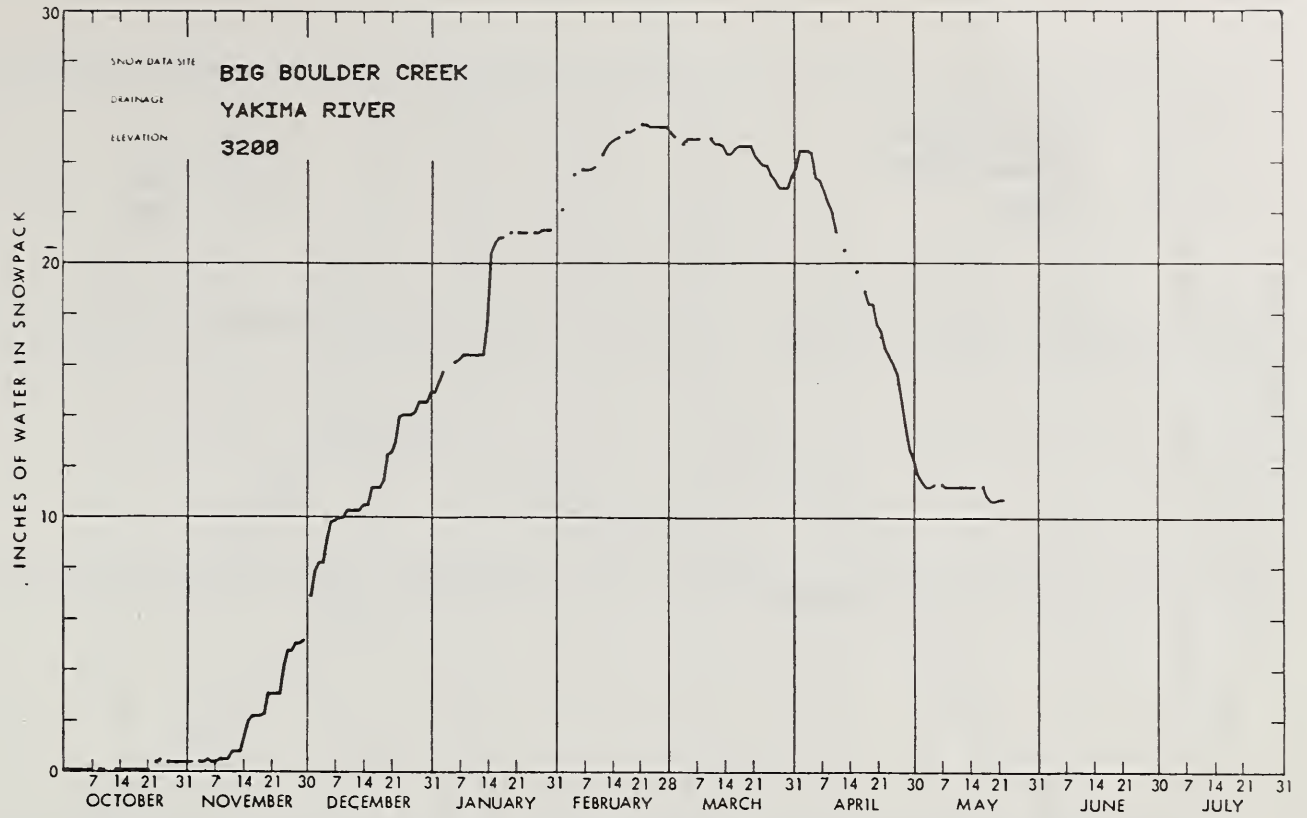
Corral Pass	21B13	6000	5/15		7.2	10.1
			5/30		2.7	0.3
Morse Lake	21C17	5400	5/15		23.2	80.5
			5/31		46.7	14.9

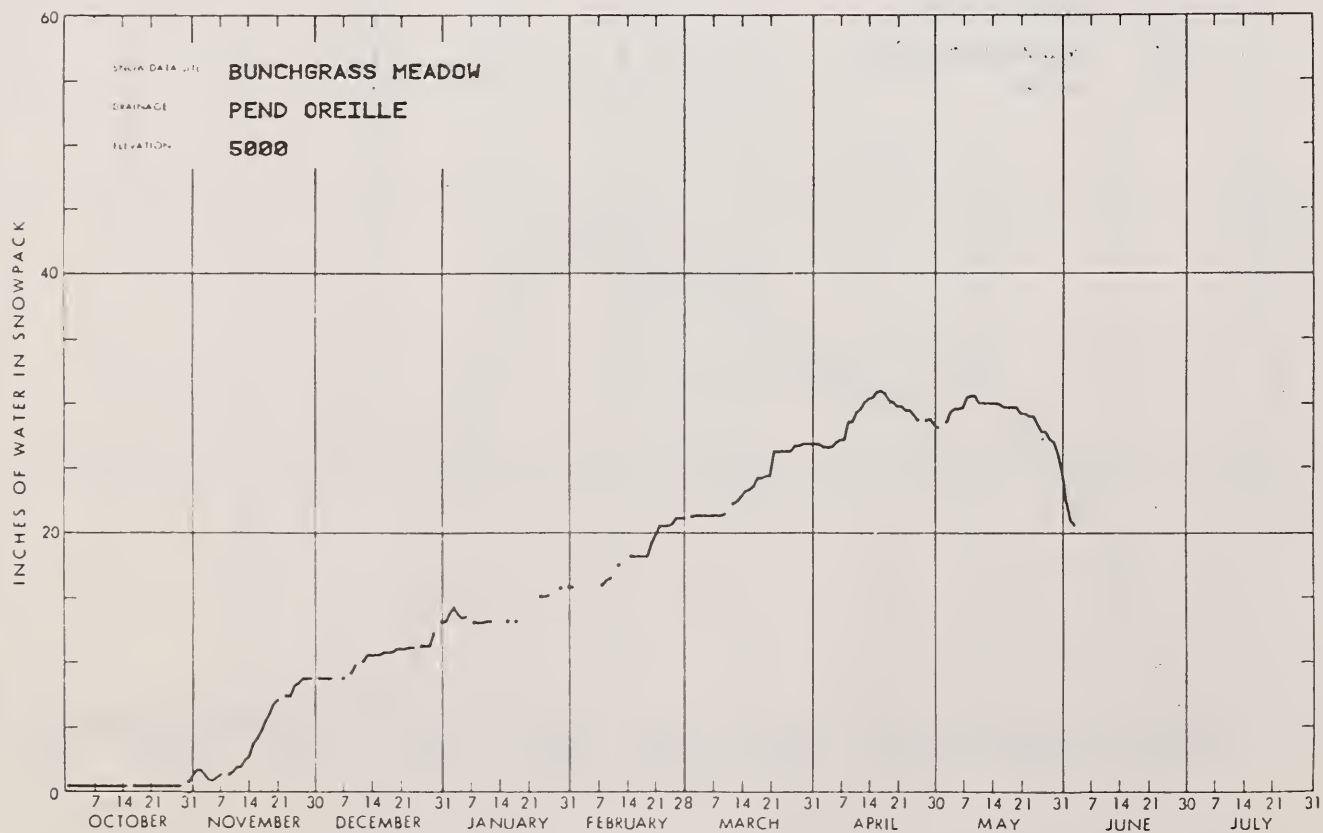
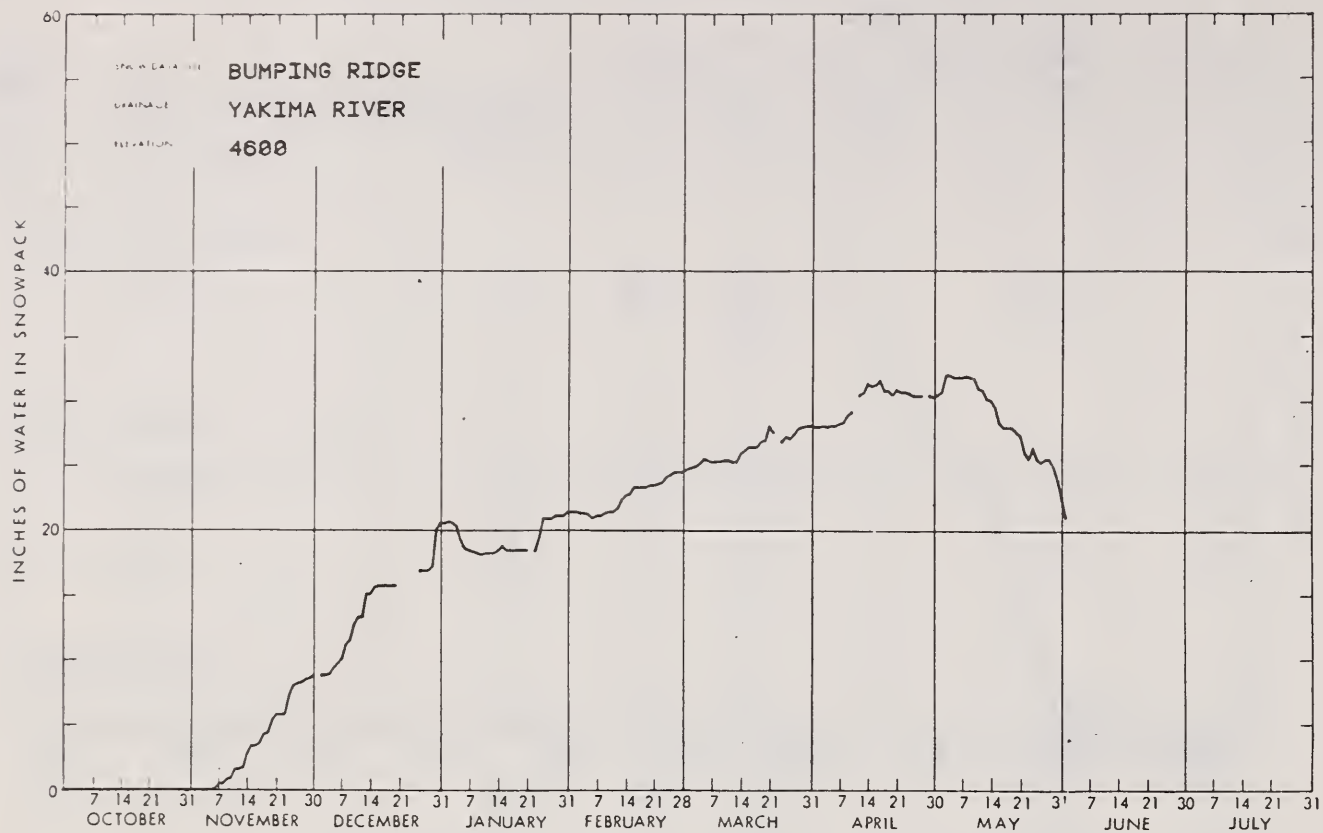
GREEN RIVER

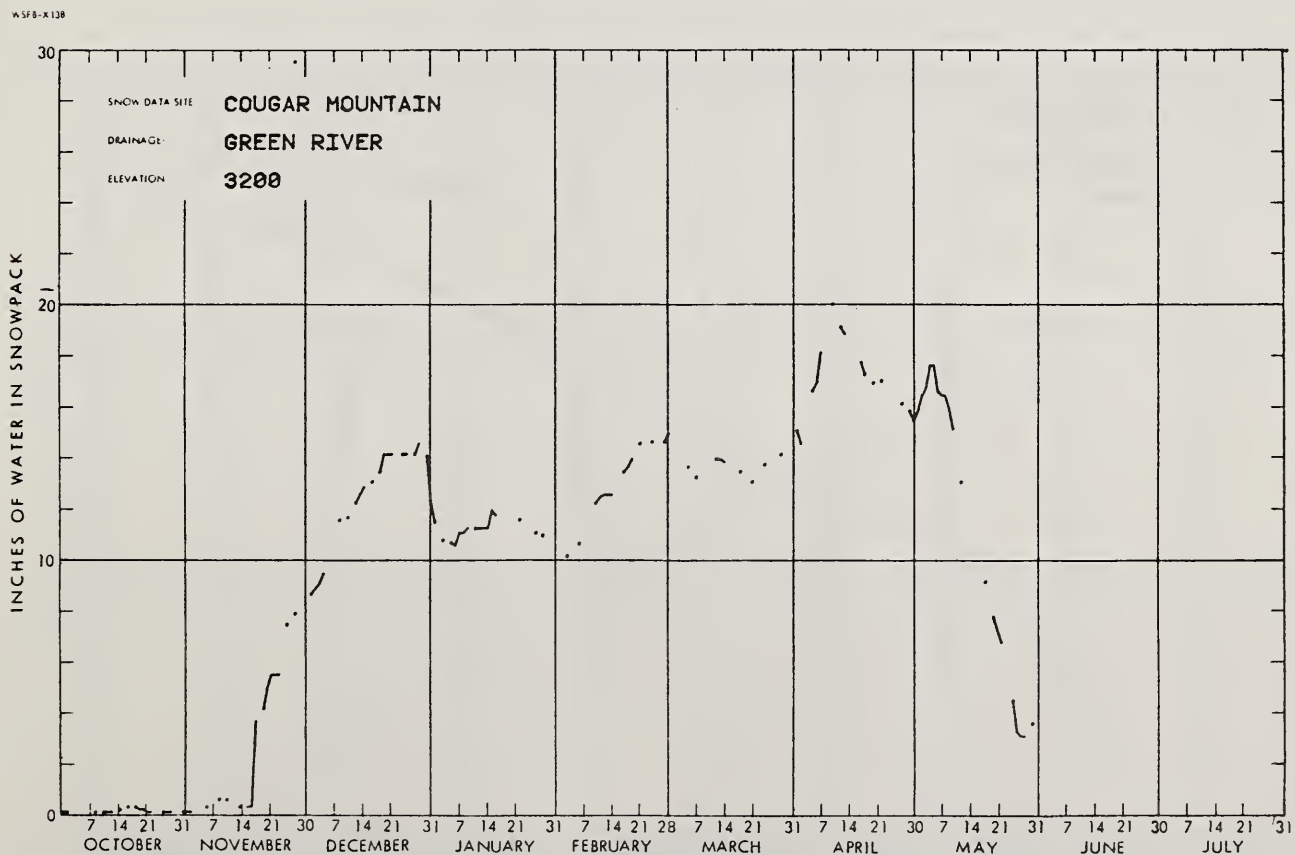
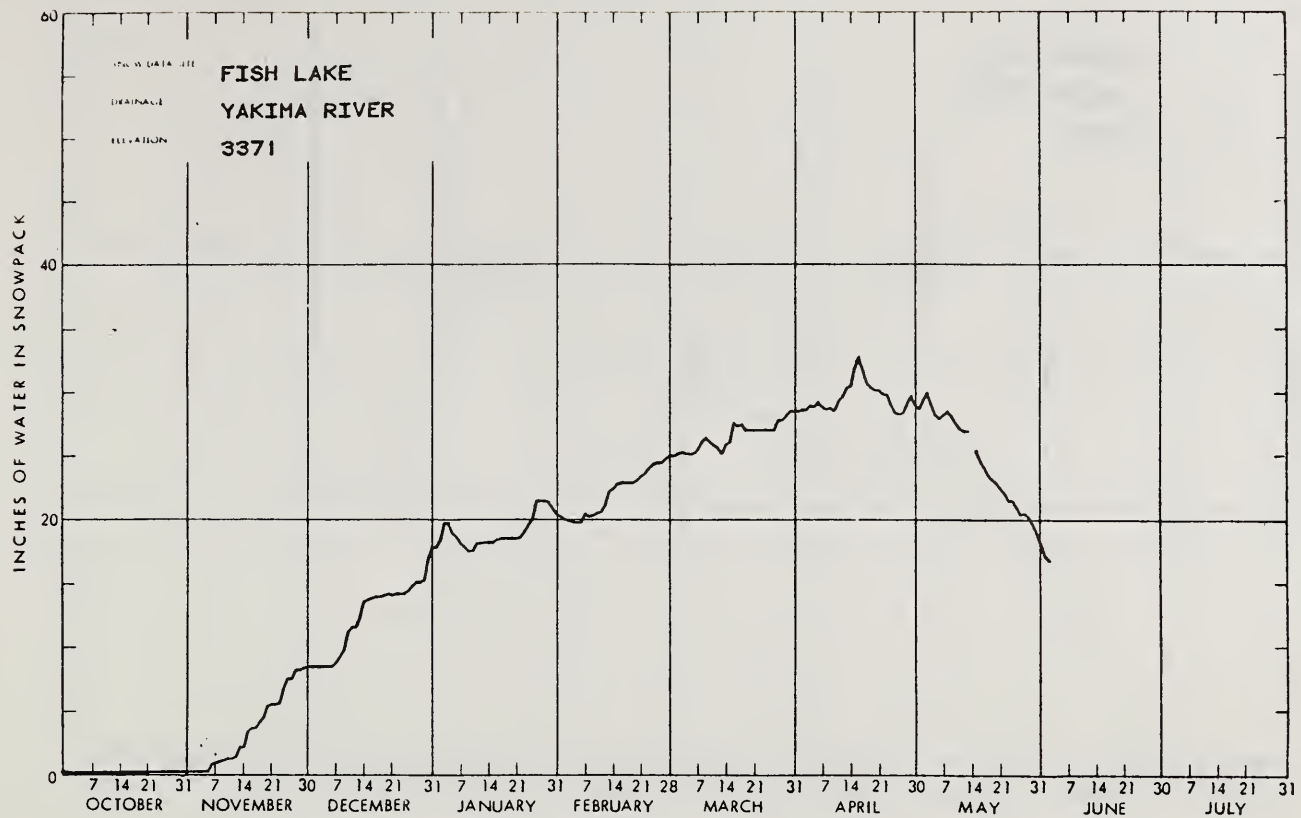
Cougar Mountain	21B42	3200	5/14		13.0	0.0
			5/30		3.0	0.0
Stampede Pass	21B10	3960	5/15		43.9	24.3
	GT		5/31		68	37.3
			5/31		36.0	0.4

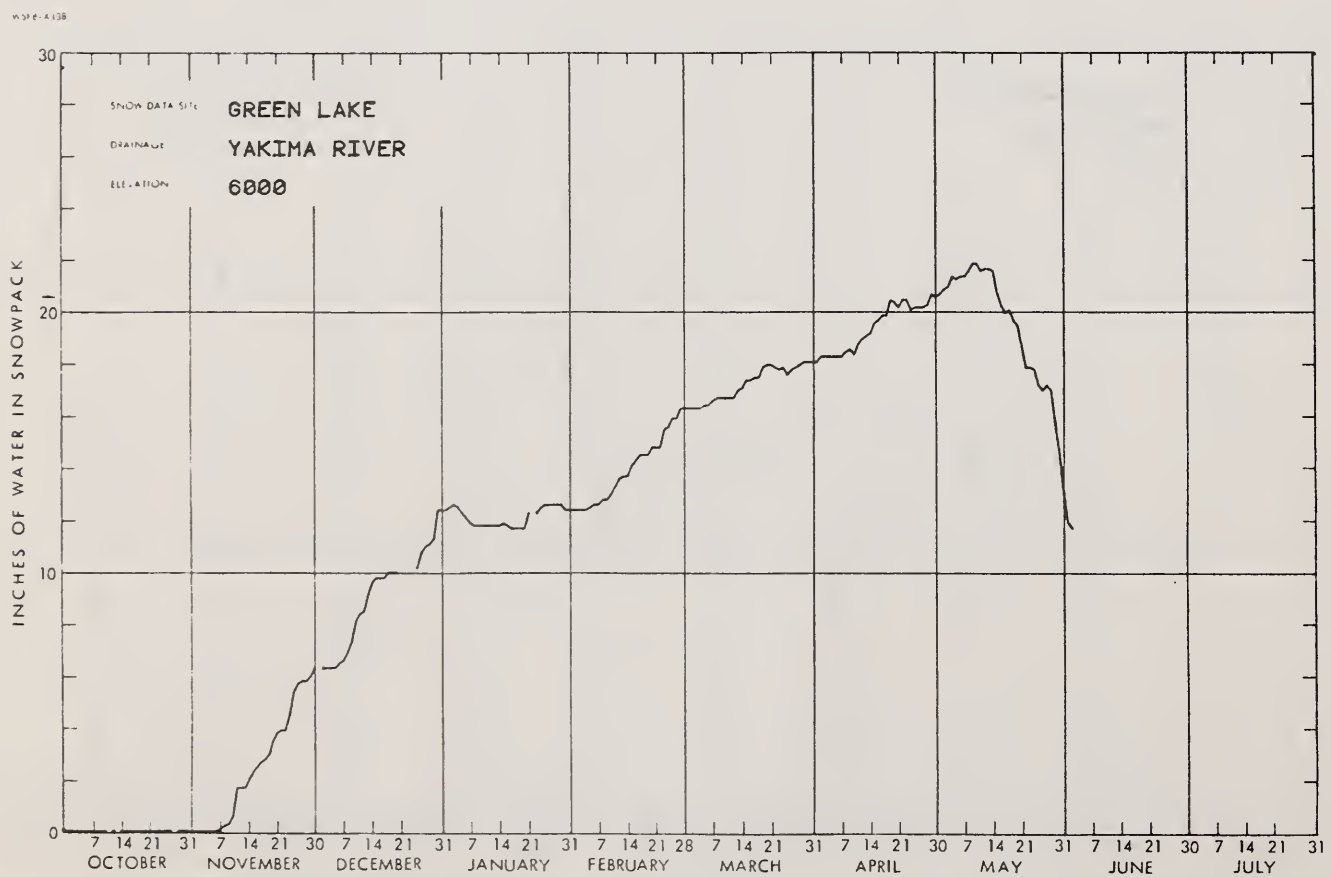
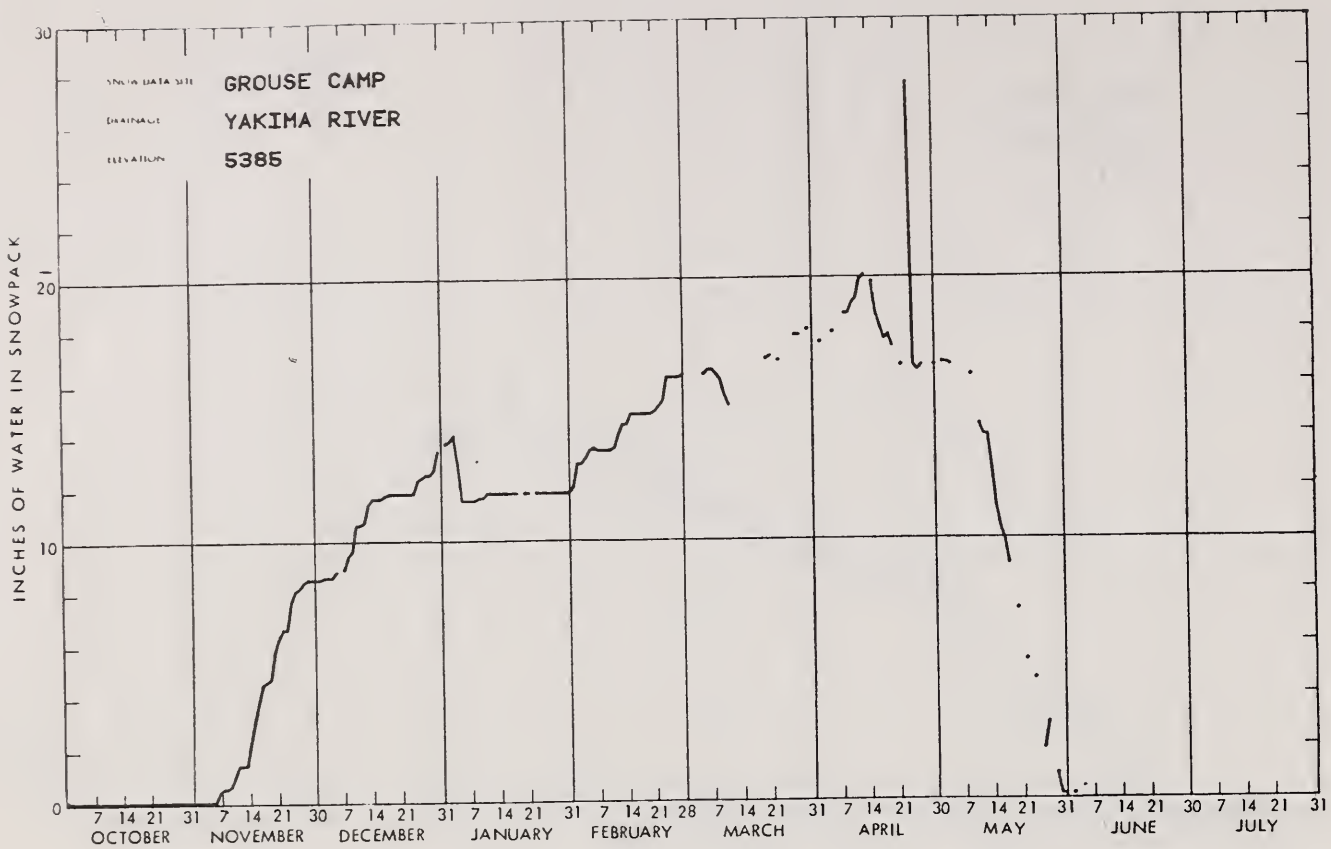
SNOQUALMIE RIVER

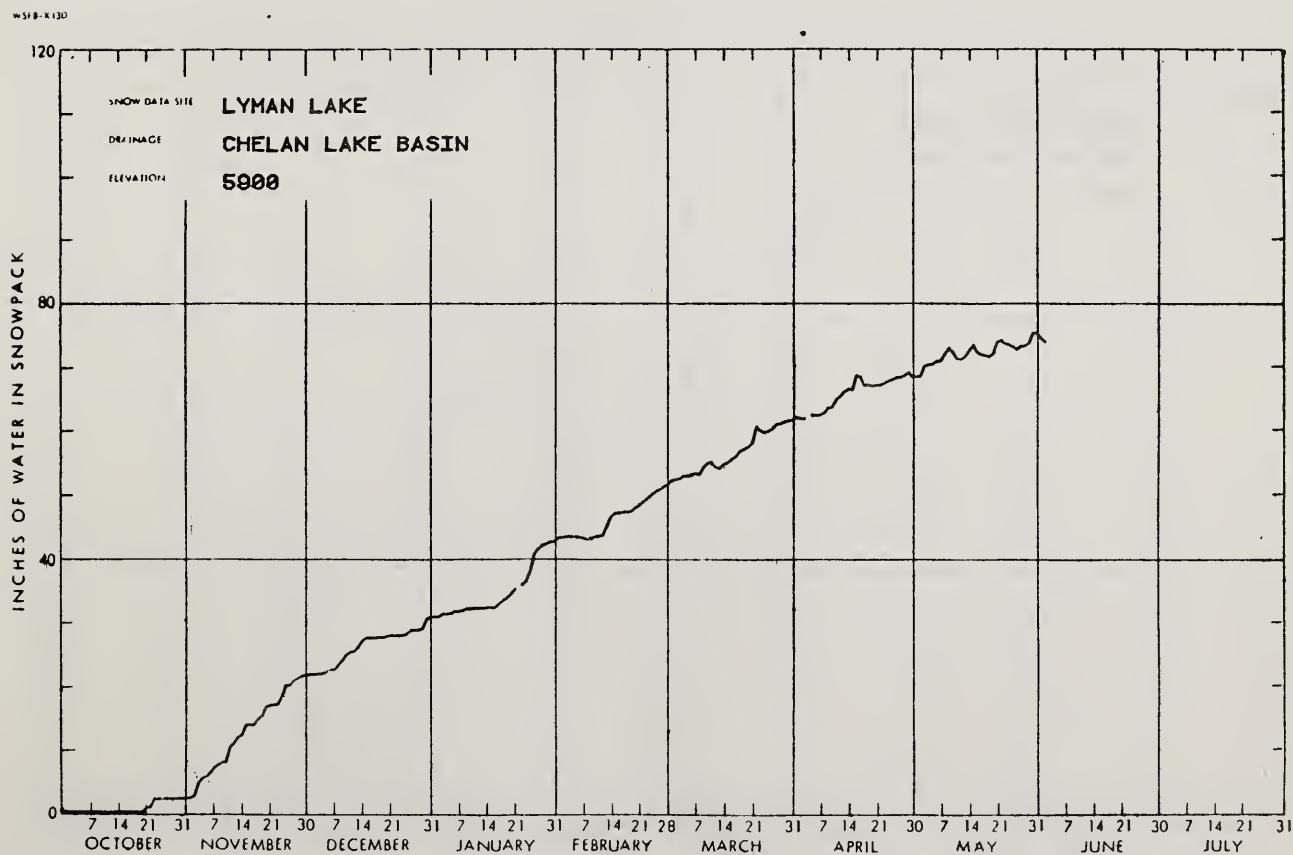
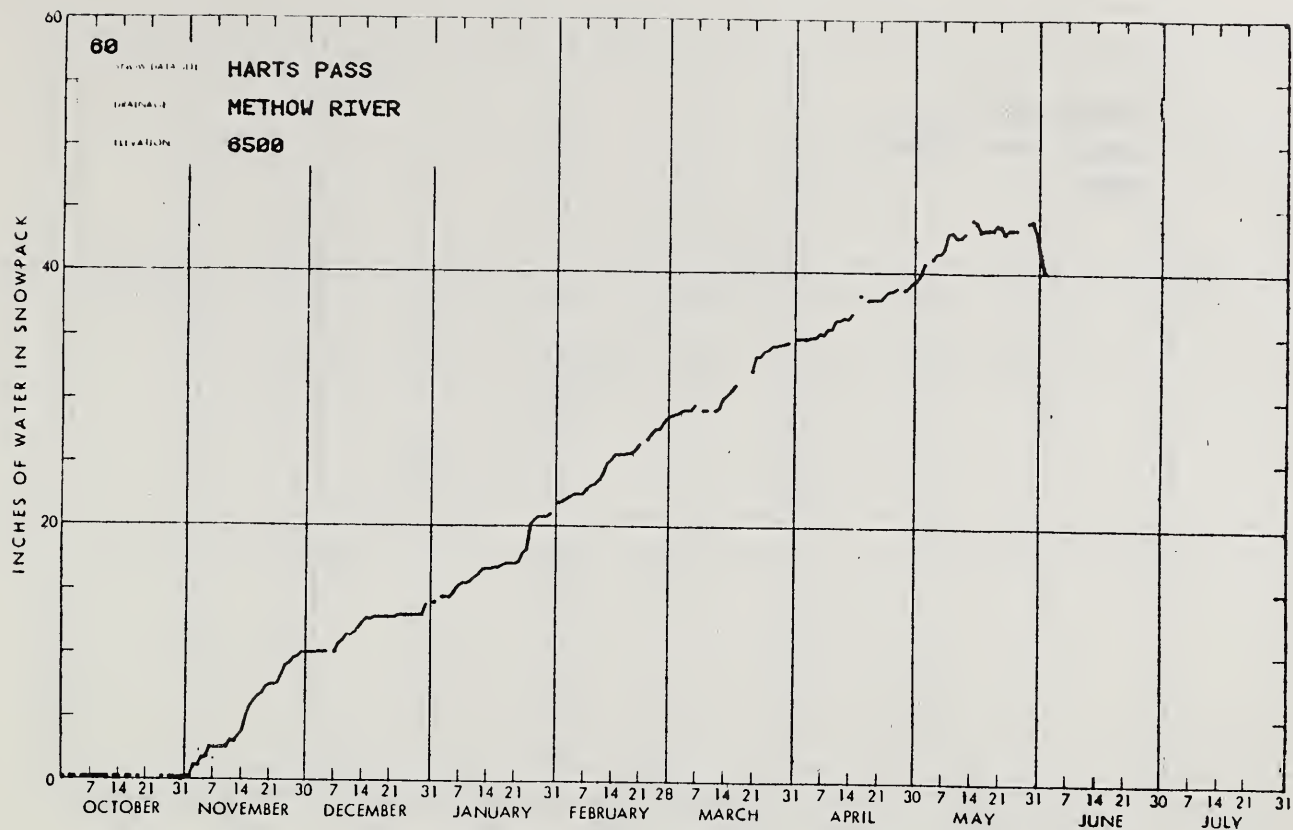
Olallie Meadows East	21B55	3960	5/15		56.5	41.3
			5/31		45.2	17.1

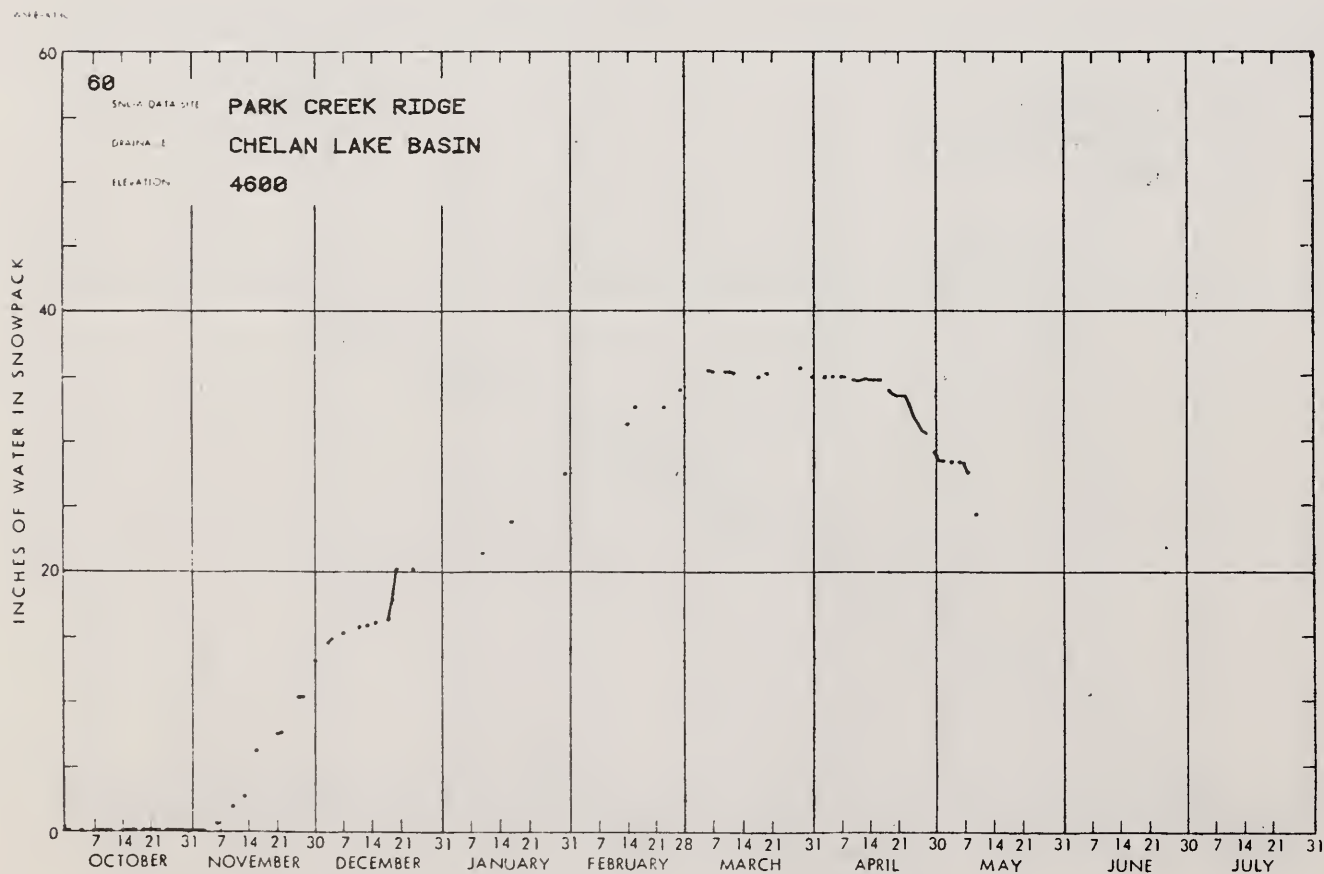
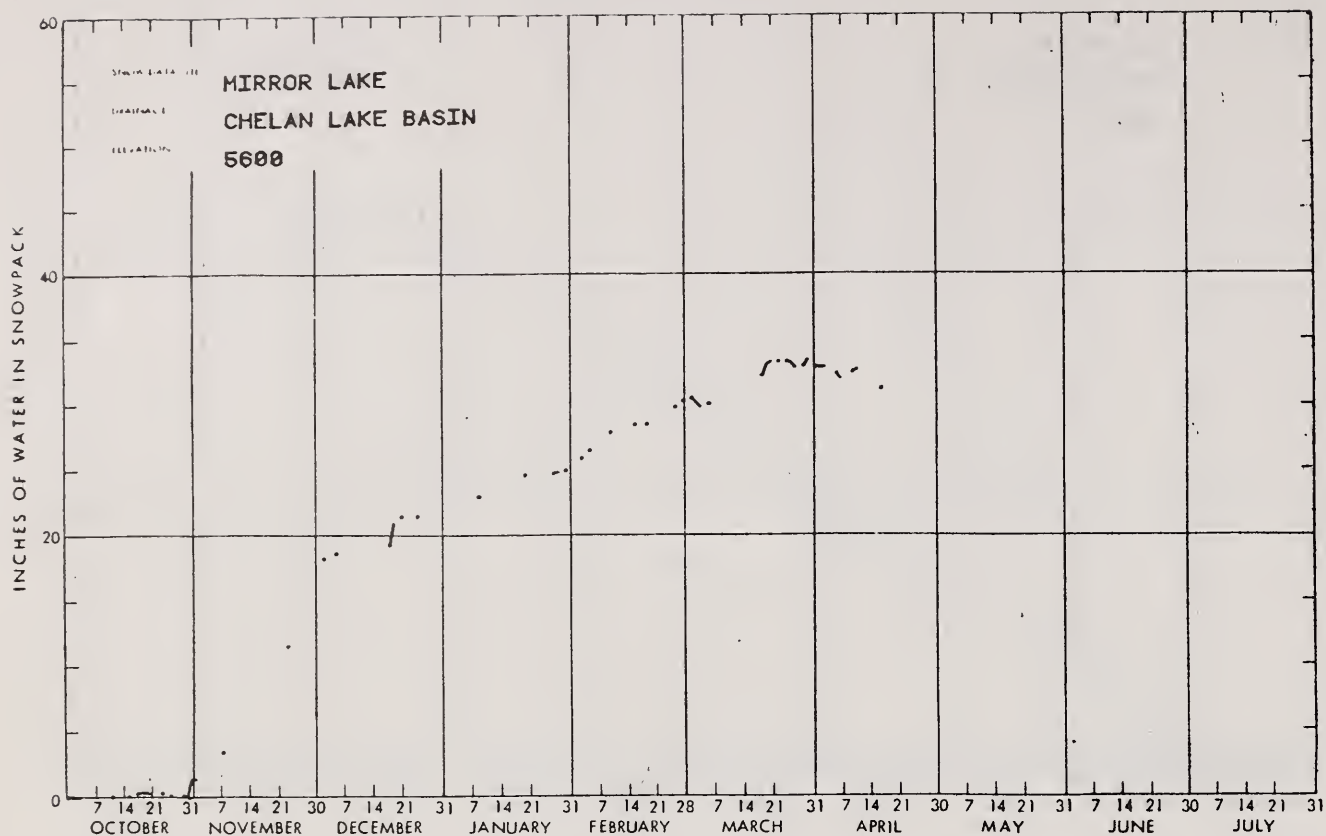


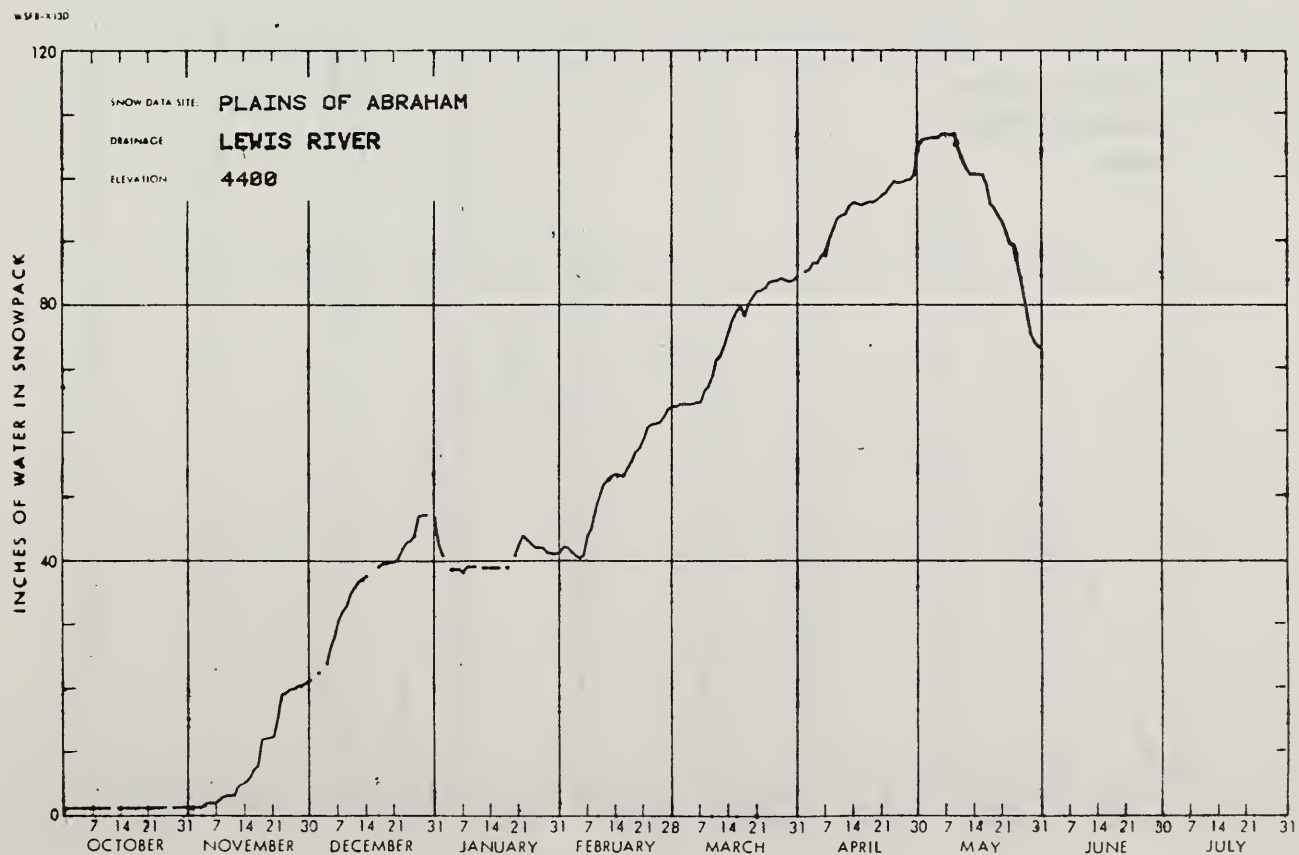
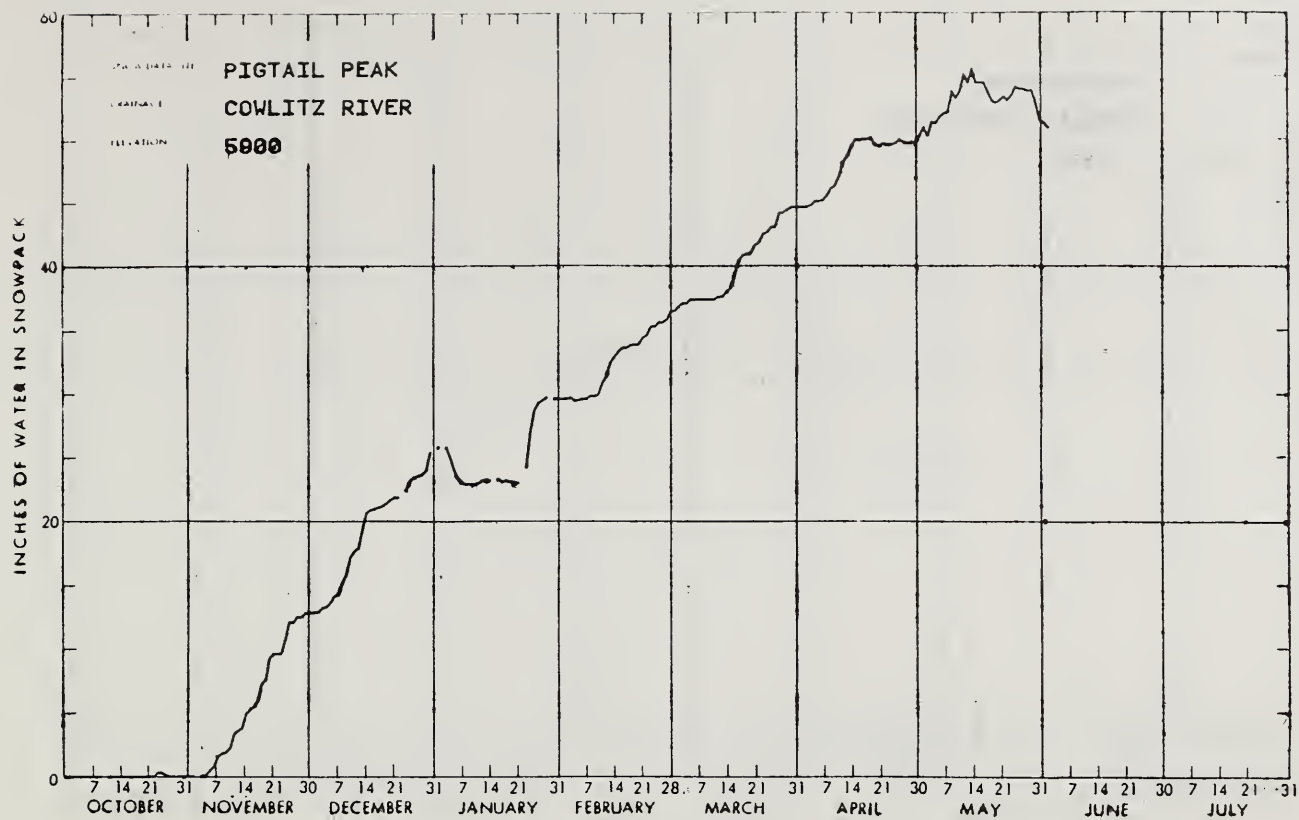


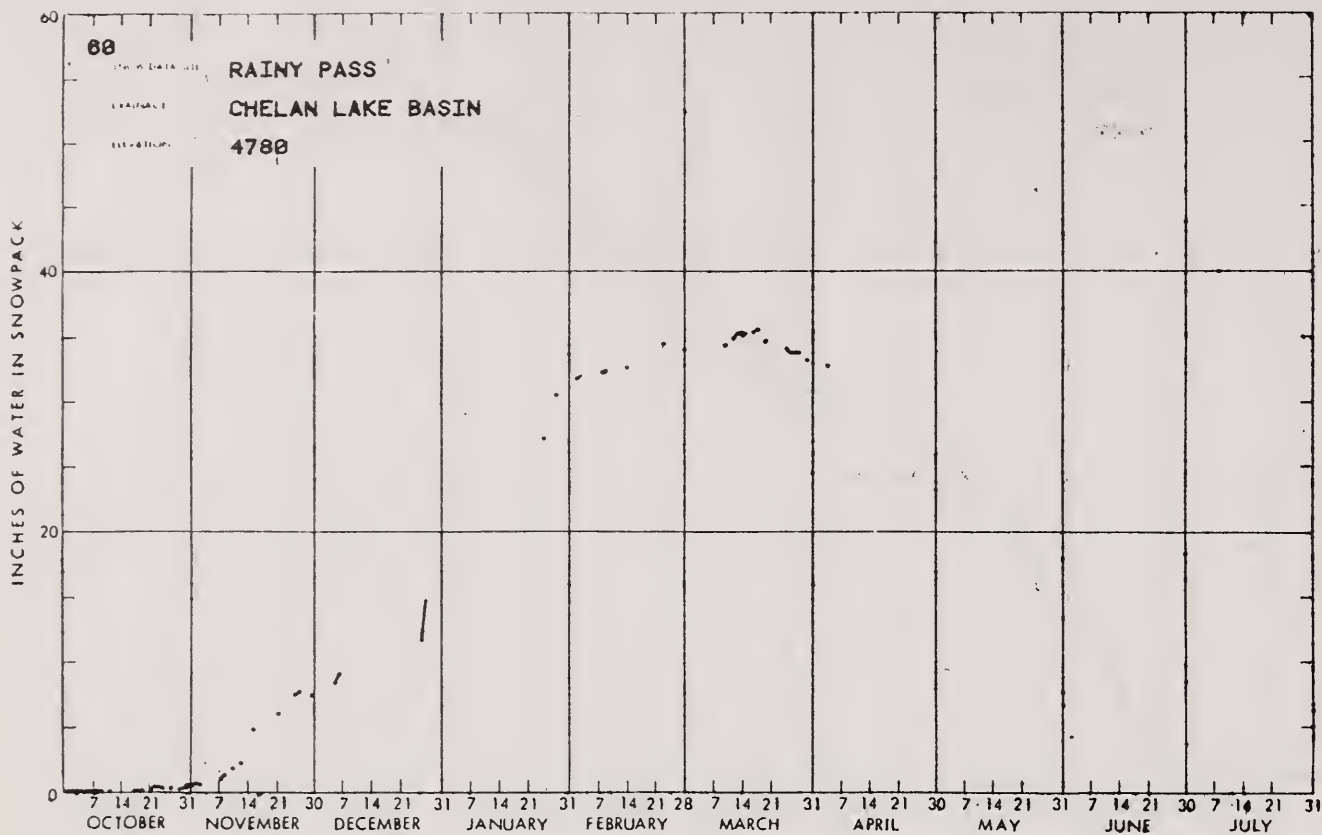




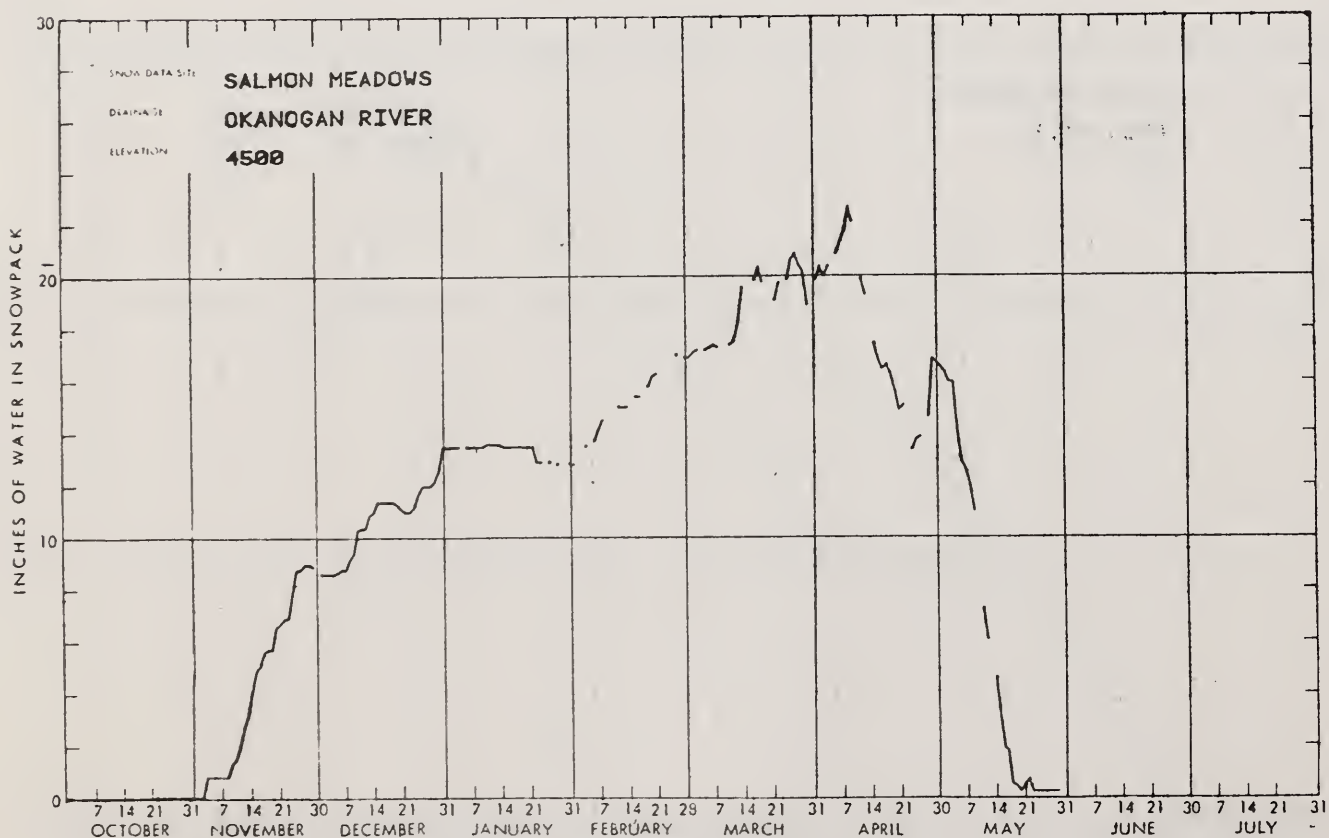


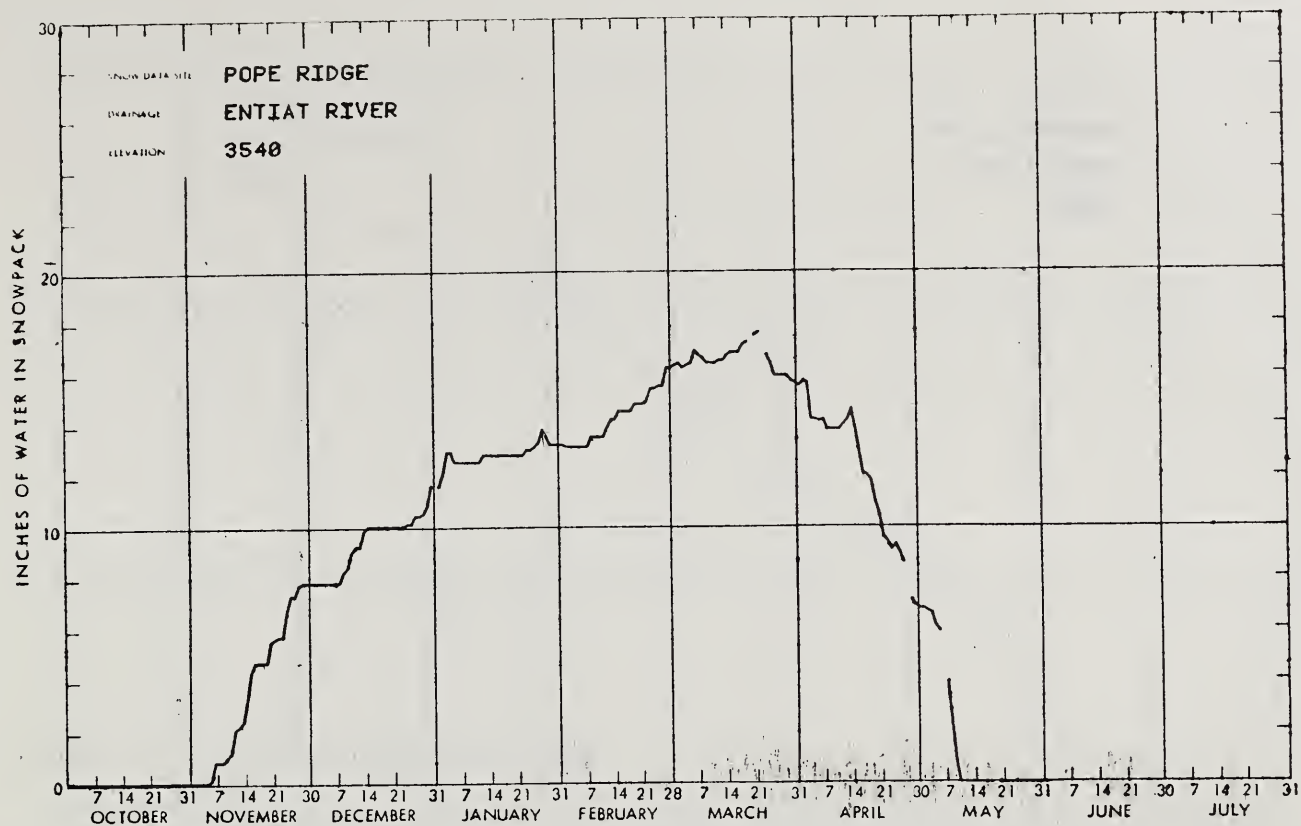




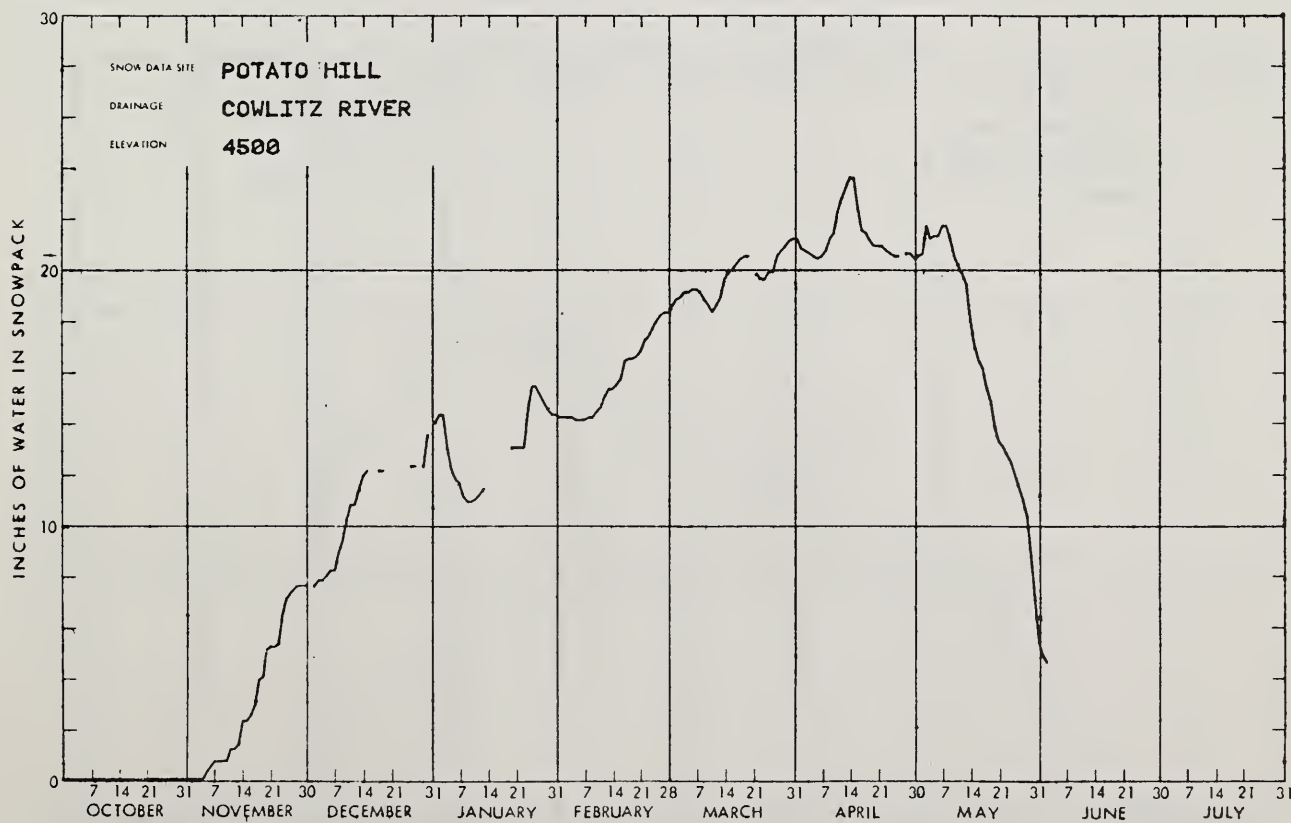


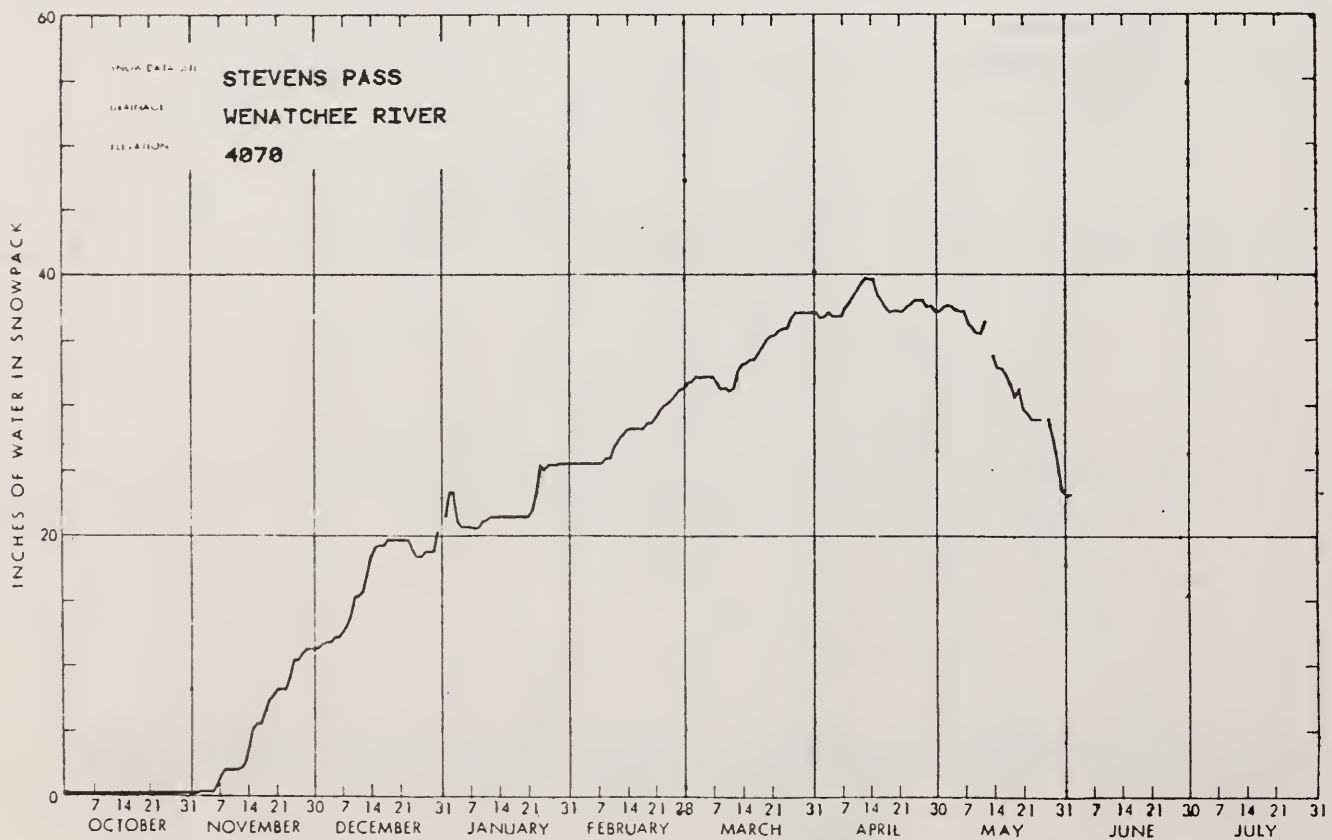
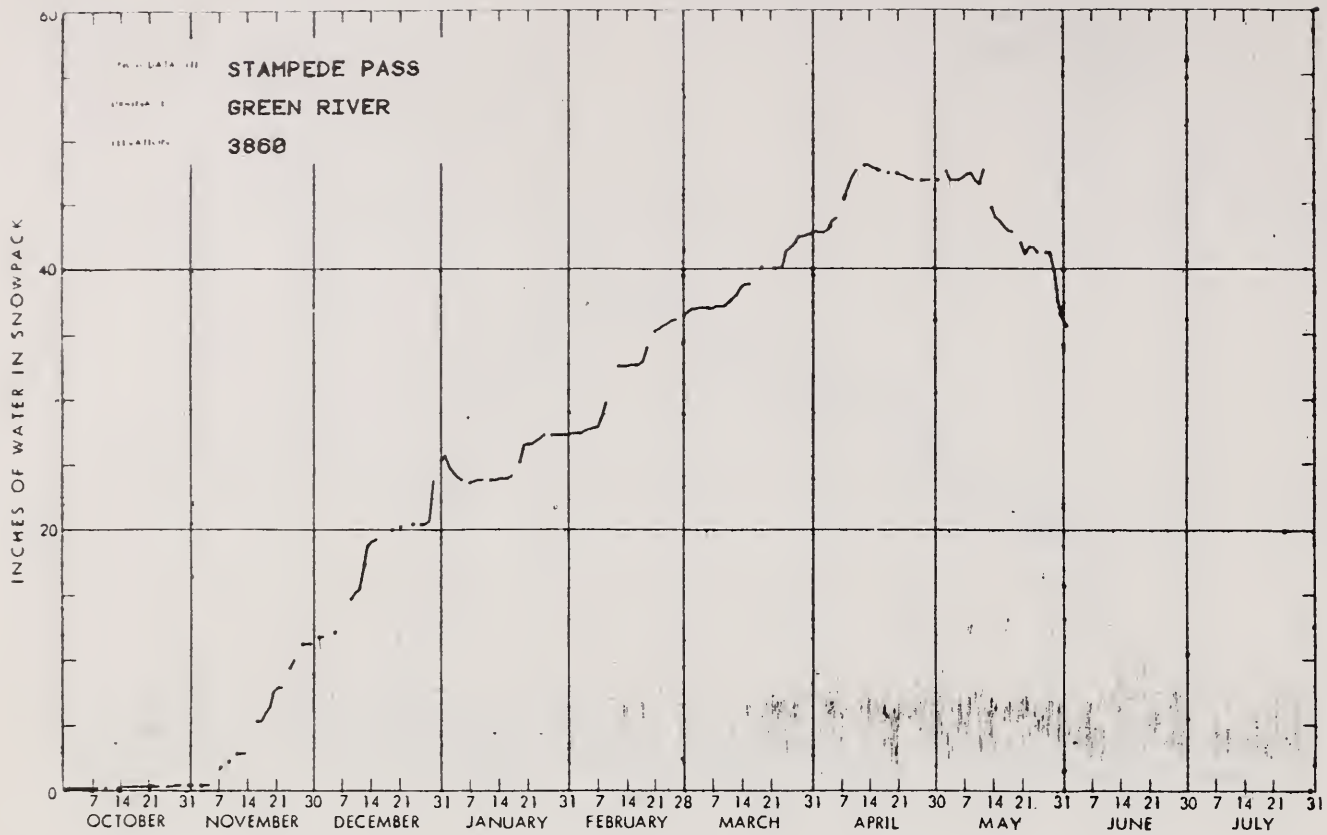
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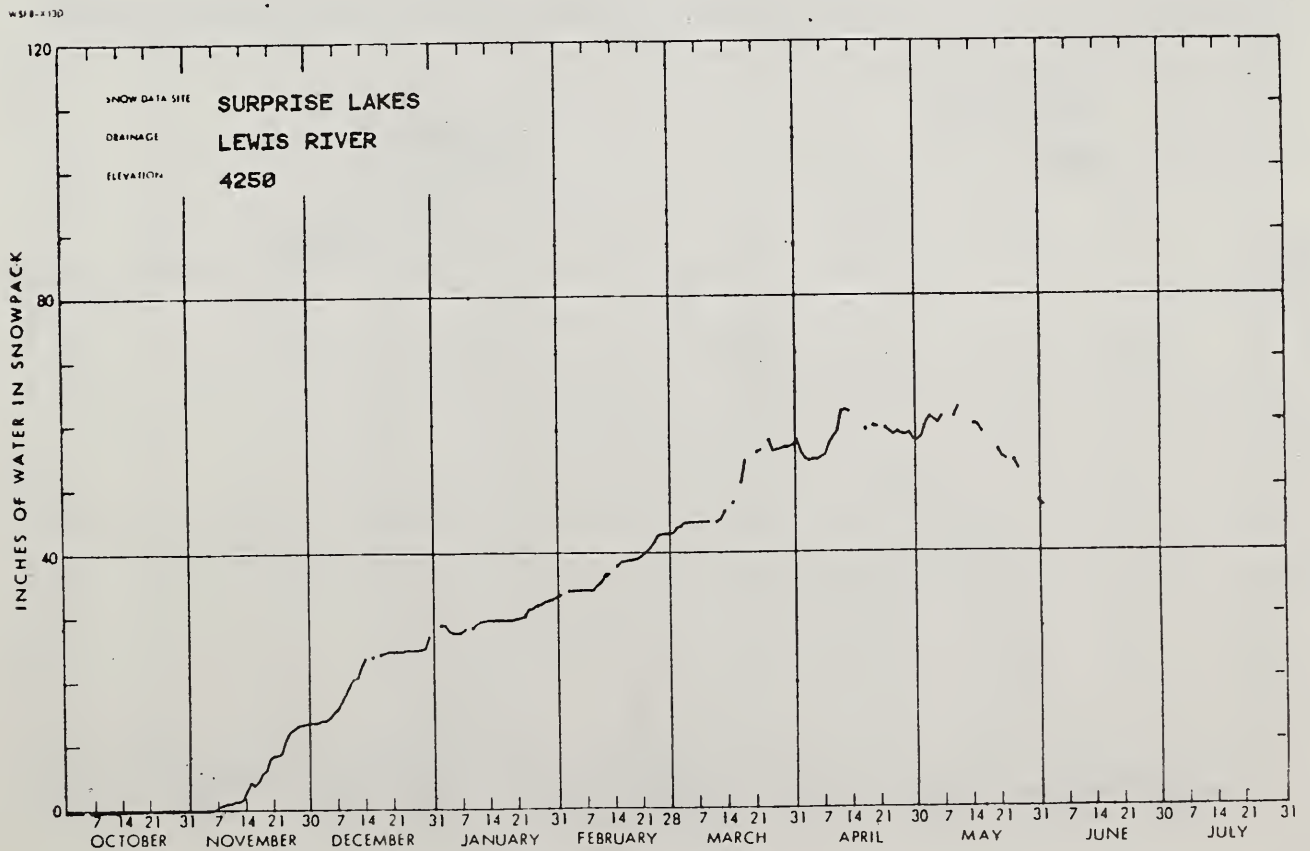
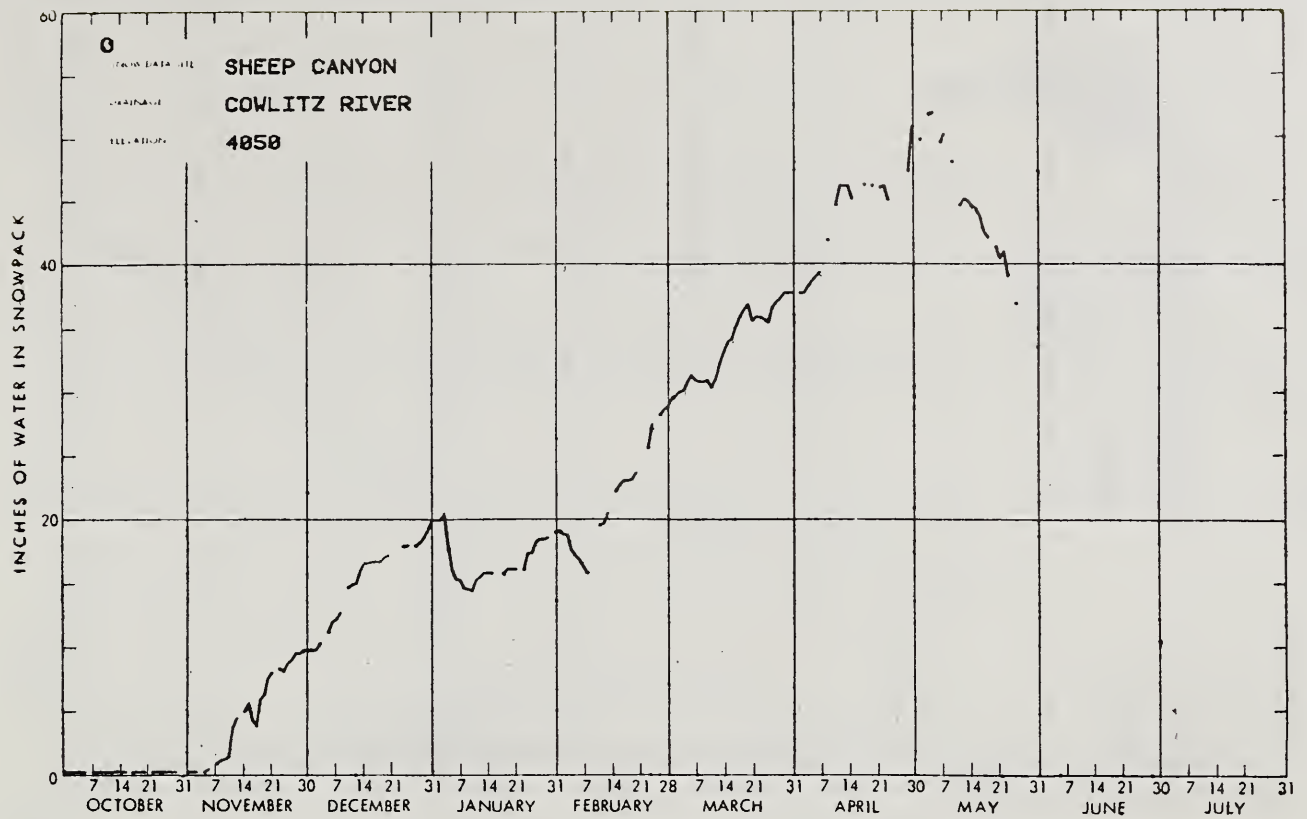


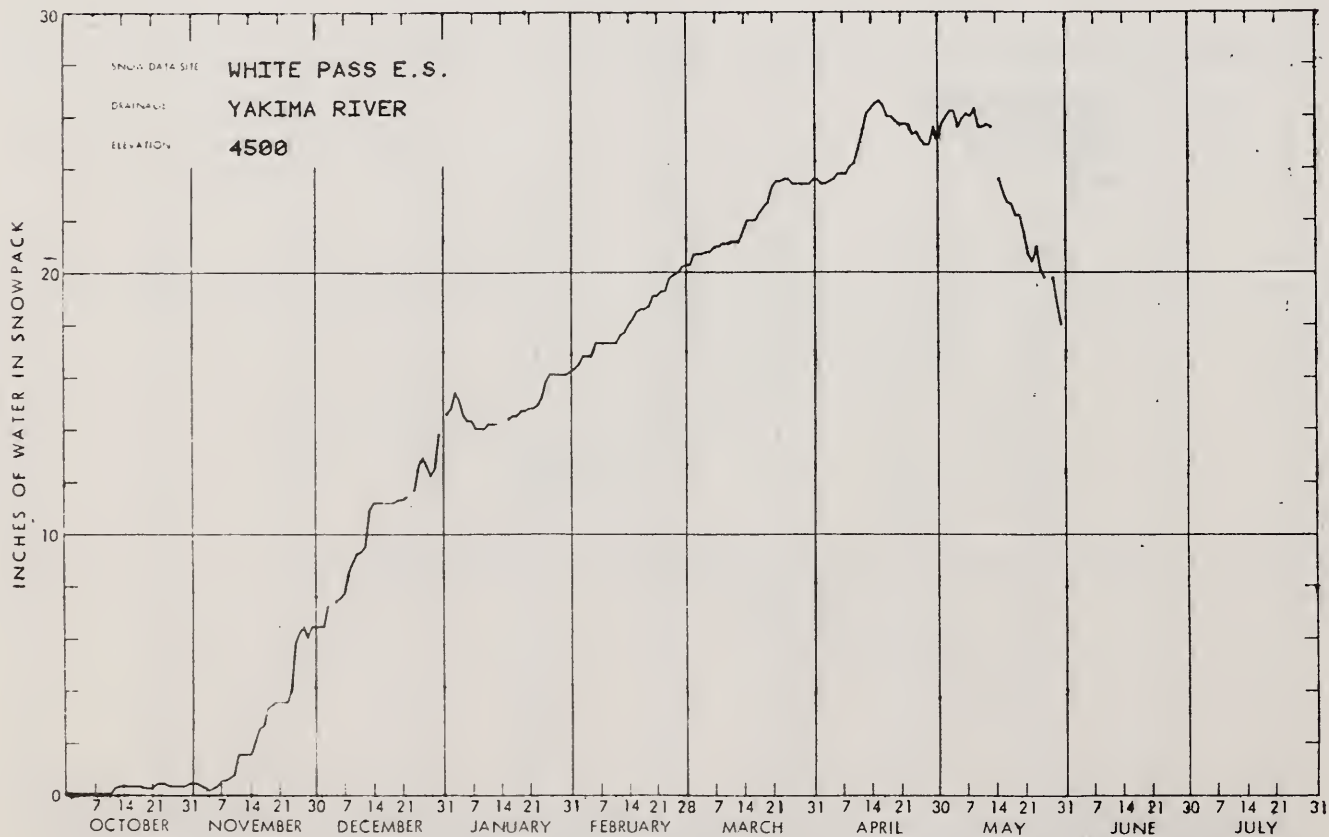
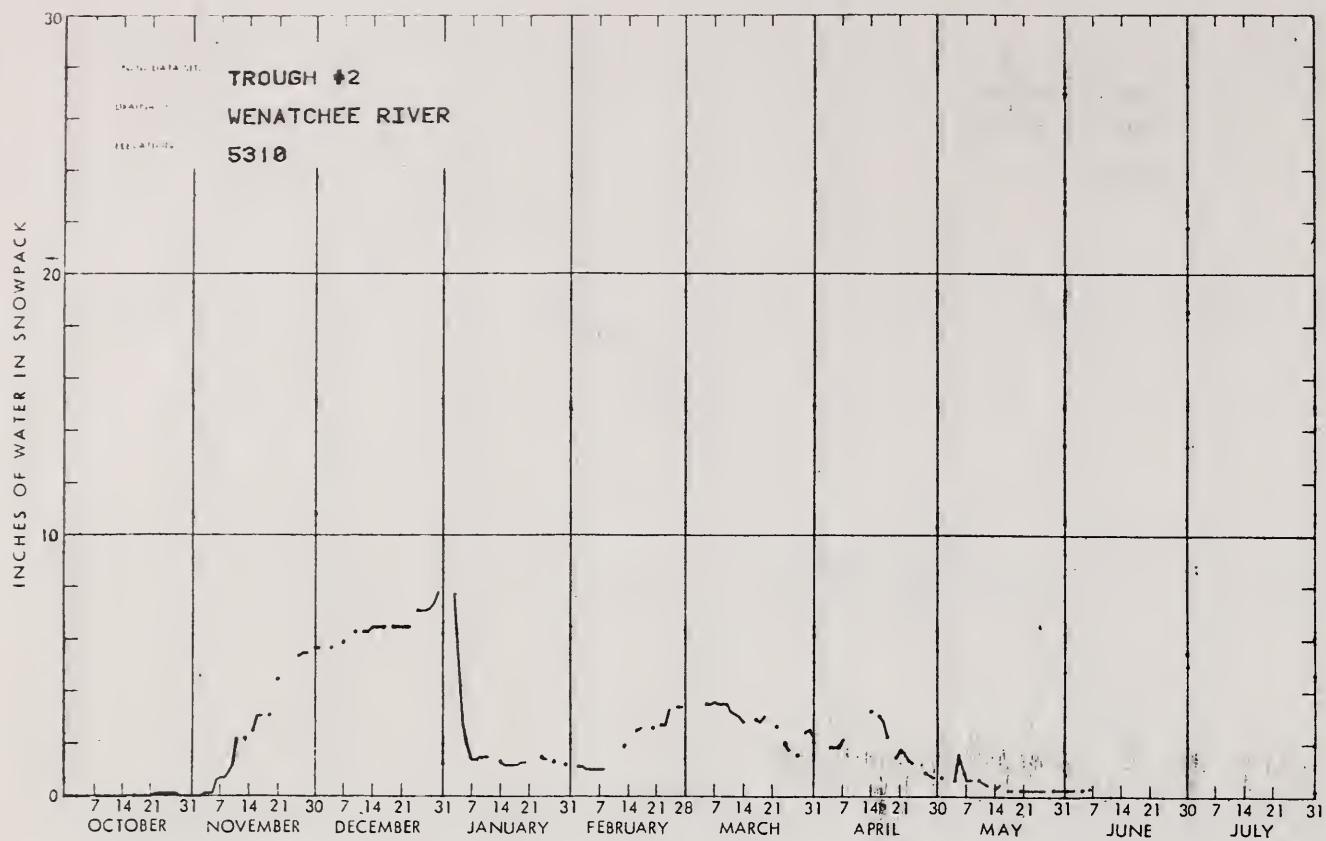


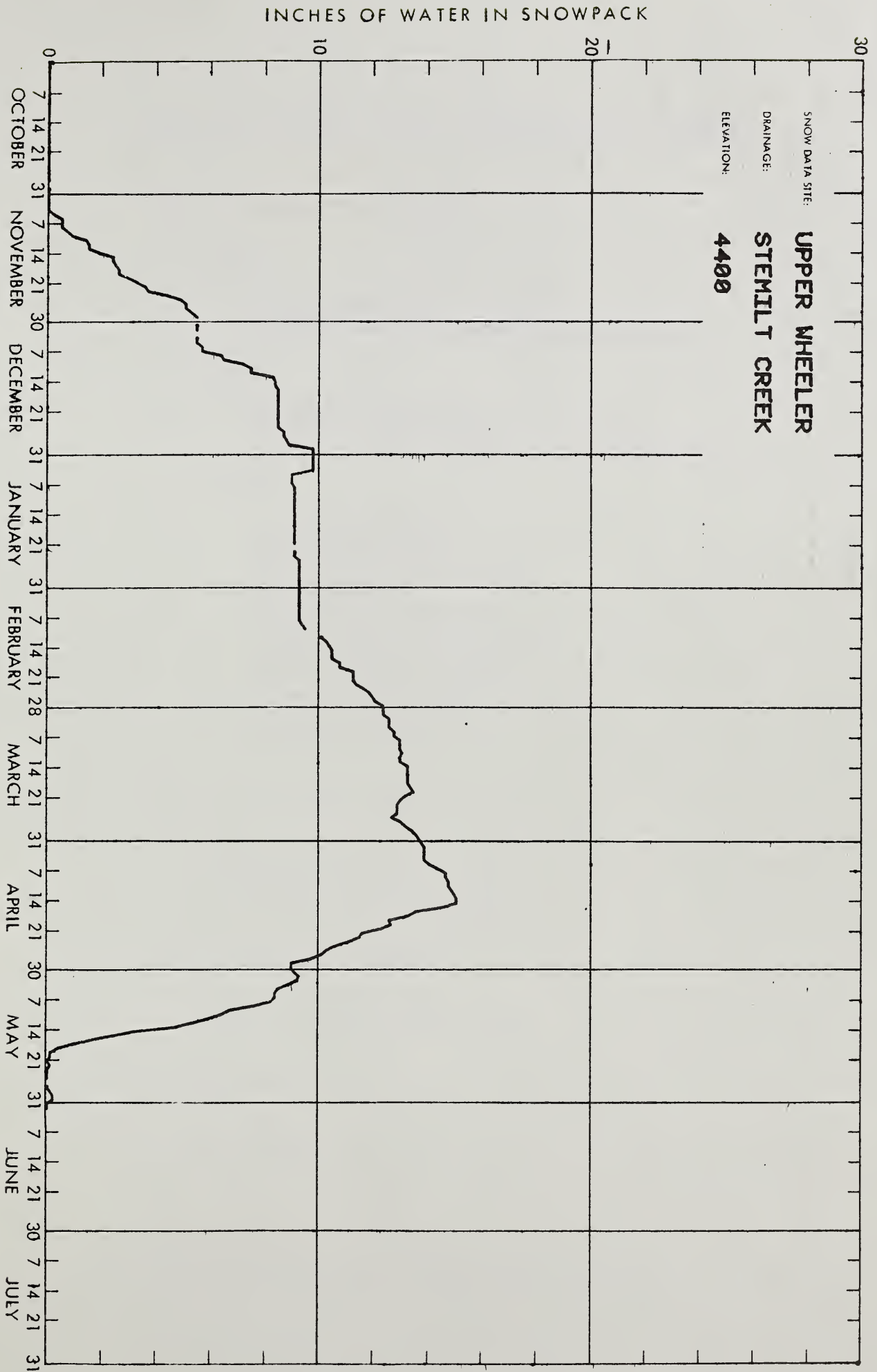
WSFB-X-138











Agencies Assisting with Snow Surveys

GOVERNMENT AGENCIES

Canada:

Ministry of the Environment, Water
Investigations Branch, Victoria, British Columbia

States:

Washington State Department of Ecology
Washington State Department of Natural Resources

Federal:

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Corps of Engineers
U.S. Department of Agriculture
Forest Service
U.S. Department of Commerce
NOAA, National Weather Service
U.S. Department of the Interior
Bonneville Power Administration
Bureau of Reclamation
Geological Survey
National Park Service

PUBLIC AND PRIVATE UTILITIES

Chelan County P.U.D.
Pacific Power and Light Company
Puget Sound Power and Light Company
Washington Water Power Company

OTHER PUBLIC AGENCIES

Okanogan Irrigation District
Wenatchee Heights Irrigation District

MUNICIPALITIES

City of Tacoma
City of Seattle

Other organizations and individuals furnish valuable information for snow survey reports. Their cooperation is gratefully acknowledged.

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